

# PROBLEMS OF ST. LOUIS

CITY PLAN COMMISSION  
ST. LOUIS, MISSOURI

Arthur C. Conney  
Jul. 1917

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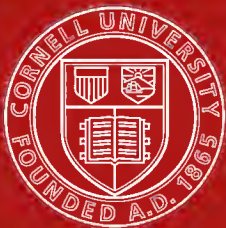
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Illustration No. 1.—To connect Lindell avenue directly with Locust street the "Lindell Cut-off" was made in 1915 at a cost of \$202,200. This improvement has proved exceedingly popular and is a good indication of what will be accomplished by other city planning projects of a larger scale.



# Facts of Unusual Importance In This Book.

- I. **THE GROWTH OF ST. LOUIS—PAST, PRESENT AND FUTURE.** Did you ever stop to consider the potent influences of city growth and their significance? As one of many interested in the present and future of St. Louis you should read this volume, and especially the INTRODUCTION.
  - II. **YOU PAY SPECIAL TAXES FOR PAVING, FOR NEW STREETS, ETC.** It is perhaps possible to reduce your tax bill the next time your street is paved. Or, if you are a merchant, a wider street with more traffic would be to your advantage. Read the chapter on STREETS. There are facts you never knew before, or perhaps you never saw them in their true light.
  - III. **THERE IS AN INTIMATE RELATION BETWEEN YOUR BUSINESS AND THE TRANSPORTATION SYSTEM.** Whether you are an employer or employe, read about TRANSIT AND TRANSPORTATION in this book. It will interest you.
  - IV. **WHAT ABOUT YOUR HOME?** If your rent is not satisfactory, you haven't enough yard, some rooms are dark, nearby stores and factories annoy you, or the property has been injured, read about what one city is doing and what St. Louis could do, in the chapters on DISTRICTING and on HOUSING.
  - V. **WHY ST. LOUIS HAS PARKS AND PLAY-GROUNDS.** The chapter on RECREATION tells about the uses of parks. Are they a luxury or a necessity? Can we get more use of them?
  - VI. **THE CITY'S APPEARANCE.** As compared with other cities, how does St. Louis impress you and your friends? Read about THE CITY'S APPEARANCE and the LOCATION OF PUBLIC BUILDINGS.
- HERE ARE THINGS ABOUT YOUR CITY YOU MAY NOT HAVE THOUGHT OF. KEEP THIS BOOK. IT WILL BE USEFUL SOME DAY.**



# PROBLEMS OF ST. LOUIS

Being a description, from the city planning standpoint,  
of past and present tendencies of growth with  
general suggestions for impending  
issues and necessary future  
improvements

THE CITY PLAN COMMISSION  
ST. LOUIS, MO.

HARLAND BARTHOLOMEW  
ENGINEER

NIXON-JONES PRINTING CO.  
ST. LOUIS, MO.  
1917



OFFICE OF CITY PLAN COMMISSION  
OF ST. LOUIS

To the Honorable,  
Board of Public Service,  
St. Louis, Mo.

May Twenty-second,  
Nineteen Seventeen.

Gentlemen:

The City Plan Commission has the honor to submit herewith a report on the present status of city planning in St. Louis. This is a revision of the report submitted in manuscript form October 6, 1916. While certain more or less definite recommendations are contained therein, the principal purpose of the publication is to serve as a basis for future work.

Subsequent recommendations of this Commission will contain more specific conclusions and considerations regarding various parts of a comprehensive plan, but previous to the final publication of a complete plan, this volume, it is hoped, will serve as a text on the subject. Insofar as possible, this volume aims to point the need, the scope and the opportunity for a unified city plan in St. Louis.

Respectfully submitted,

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## FOREWORD

This publication is prompted by a conviction that a city plan for St. Louis which shall be thoroughly applicable and complete, will only be possible when there exists an overwhelming *understanding* and *appreciation* of its necessity and great advantage. City planning principles as applied to St. Louis are set forth in word and picture. No attempt has been made to offer complete solutions of all present problems. Many of these must be the result of further continuous investigation and study, albeit certain definite conclusions are offered. If existing facts are given honest consideration by all citizens, the preparation of this publication will be justified, for conditions thus brought home to them can hardly fail to quicken a civic enthusiasm and ultimately result in some action, and *action* is St. Louis' greatest need.

THE CITY PLAN COMMISSION.



## S U M M A R Y

For the purpose of showing the busy man what he may expect to find in this volume, the contents of each chapter are herewith briefly summarized.

The Introduction tells of the growth of St. Louis, its consequences, and the problems of transit and transportation, districts where values and use of property have declined, and the opportunities for providing in advance for public work at a great saving in cost for future public work.

A Major Street Plan is suggested, whereby certain streets will be developed as principal traffic thoroughfares, having greater width and more substantial paving than the majority of all other streets. These remaining streets, which may be called minor streets, will thus secure a greater degree of privacy and more stability of development. The relation of the street plan to the business district is described; also the tendency of the center of the business district to shift from one position to another. The necessary legislative and financial measures for the logical and beneficial accomplishment of the Major Street Plan are also thoroughly considered.

The reasons why St. Louis is a great center of manufacture and of trade are shown, and how we may expect to secure future increases is clearly shown in the chapter on Transit and Transportation. Development of the river front and the railroad terminal system are most important factors in this respect.

By Districting is meant the establishment by the city of restrictions on the height, the area and the use of all property. In the chapter on Districting are described the reasons why such restrictions have become necessary, what restrictions have been established in

other cities, their constitutionality, and why districting is necessary in St. Louis.

The recreation system of St. Louis needs systematization in order to be of greater usefulness to the community. The various forms of recreation facilities and their respective effectiveness are considered.

More people own homes in St. Louis than in any other large American city, yet St. Louis is backward in recognizing and providing for the elimination of certain malignant housing evils. While former evils are still permitted to exist, additional abuses of the housing of our people are constantly being permitted.

In the chapter on Location of Public Buildings and the City's Appearance, attention is called to a phase of civic improvement to which St. Louis has not paid due regard. In a city of abundant homes it should be no difficult or expensive matter to secure exceptional attractiveness.

•



## INTRODUCTION

For more than a century, the industry, the population and size of St. Louis have increased steadily. As in other American cities, little thought has been given to the *consequences* of such increase. Only when we are confronted with unusual economic or social problems has attention been fixed on the contributing causes. The building of a city is an artificial, not a natural process. The prime requisite of great cities is unity, cohesion. Failure to recognize this earlier has caused unwonted costs for too-long-delayed improvements and has stunted growth. It may even be predicted that future generations will also regard this failure as directly contributing to the decadence of cities.

To analyze the causes that have made possible a city's growth, to foresee the tendencies of further growth in the light of present and past conditions, and to control, insofar as possible, future development, is the science and art of city planning.

Individuals unite in communities or cities to jointly obtain better living conditions and greater privileges and enjoyment than each could obtain alone. The rise of great cities has automatically curtailed certain individual rights, though not always sufficiently soon. The *welfare of the group* is therefore now generally considered to supersede the *rights of the individual* when questions of health, safety and general welfare arise. A sufficiently broad interpretation of the supremacy of community rights, unfortunately, was not prevalent during the period of greatest city expansion, a condition which resulted in the present great transportation problems in all large cities, through selfish or unintelligent land

subdivision, to say nothing of other problems equally great.

St. Louis is no exception to the general rule of city expansion. Some of its problems are perhaps more pronounced than those elsewhere. However, St. Louis has been seemingly less alert to appreciate the nature of its problems and to take action accordingly.

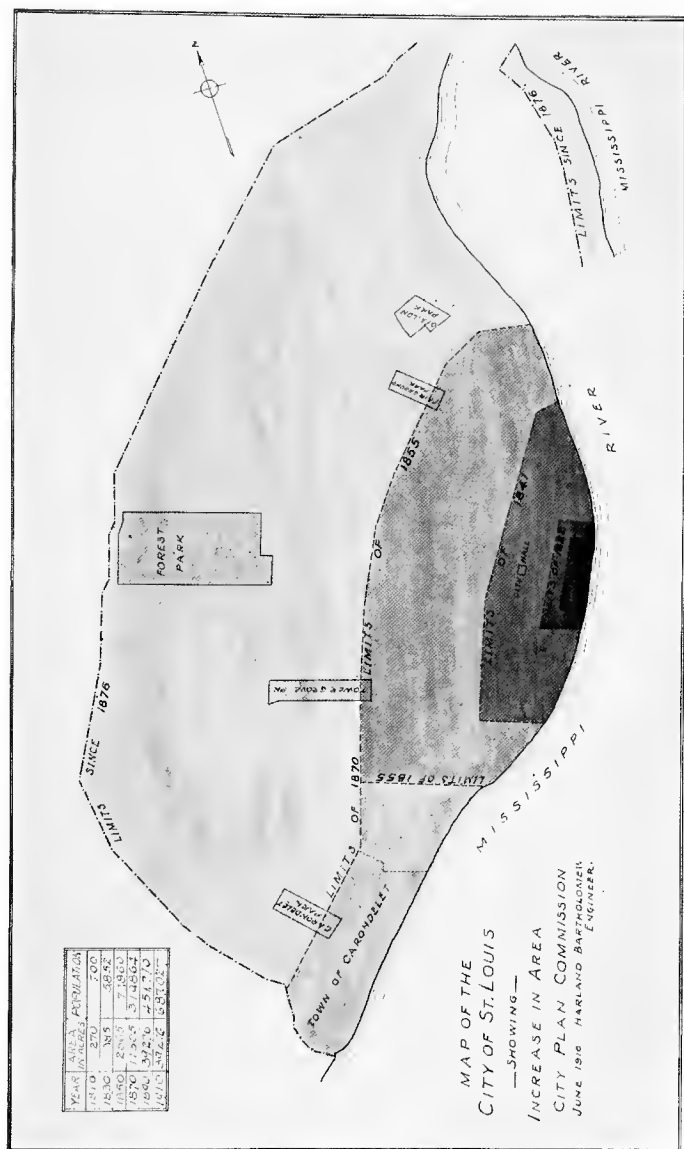
### The Growth of St. Louis

The story of the city's growth is briefly as follows:

Year	Population	Area
1764.....	40	270 acres
1822.....	5,500	385 "
1841.....	16,469	4.5 sq. miles
1870.....	310,864	17.98 " "
1876.....	335,000	61.37 " "
1890.....	451,770	61.37 " "
1910.....	687,029	61.37 " "
1915.....	745,988	61.37 " "

Under the Spanish and French, St. Louis enjoyed a quiet growth, for, when ceded to the United States in 1804, as part of the Louisiana Purchase, there were no buildings west of Fourth street. From 1825 to 1841, a general period of prosperity prevailed and the population increased to 16,469 in 1841, though there were few houses west of Seventh street. At this time the city limits were extended to include several small adjoining villages. From this time on the population of St. Louis increased rapidly. In 1850 the total population had increased to 77,860, and many street and sewer improvements had been made. In 1855 the city limits were extended west and north as far as Grand avenue, the southern boundary being what is now Keokuk street.

The city continued to grow and by 1860 had a population of 185,587 and more numerous public improvements, including a street car line. The outbreak of the



Plan No. 1.—When the city limits were extended in 1876 the area of the city was more than doubled. That the new boundaries should soon if ever be outgrown was scarcely realized, and unfortunately the boundaries became so firmly established by law that to extend them now as needed is an exceedingly difficult procedure.

Civil War caused a temporary halt in the city's increase, but soon after the onward march was resumed and has steadily continued to the present day. The city boundaries were extended in 1867 to include the town of Carondelet and in 1876 the present city limits were established.

Up to 1900 the growth of the city had been usually within the city limits. Whenever development outdistanced the boundaries, these latter were soon extended sufficiently far to include all outside growth. The area of the city was increased several times by the extension of 1876. But even before 1900, and especially since that date, great increases in population have occurred outside the city limits and no concerted effort has been made to permit the city to benefit by the increase for which it is responsible. The population of East St. Louis and St. Louis County increased over 60,000 from 1900 to 1910 and is probably increasing at a still greater rate since the last census.

Population increase is not the most serious concern of St. Louis. Additional manufactories and industries are locating outside the city limits, while much vacant territory still is to be found within the city. Modern and attractive residence areas in St. Louis County are attracting present city residents. Several large, local, formerly exclusive, residence areas have been deserted by original owners and occupants, only to rapidly deteriorate, or in some instances, to be completely abandoned, to the great detriment of the property and depreciation of property values.

### **Principal Problems of St. Louis**

The problems of St. Louis are briefly as follows:

- (1) Restoration of districts wherein values and occupancy are at a low ebb to a greater degree of usefulness and productivity.

- (2) Perfection of transportation and transit systems to make possible the use of property within the zone of the city's influence, *now inaccessible*.
- (3) Extension of the city limits, or power of the city, to secure greater uniformity and permanency of development.
- (4) Provision for public works and service sufficiently far in advance to preclude undue delay and excessive expense.

### Water Supply and Sewers

Lest a misunderstanding should arise that the specific improvements dealt with more in detail in this publication would, if executed, be all that is required to constitute a city free from great imperfection, be it said that two of St. Louis' greatest and most urgent requirements are not discussed—future water supply and additional sewers. Failure to mention each of these necessities would constitute virtually an evasion of one part—and a most important part—of the general city improvement problem. They are usually considered foreign to a discussion of purely city planning principles, however.

In the annual report of the Water Commissioner for 1915 appears a carefully prepared and detailed statement of the future water supply of St. Louis. The present Chain of Rocks plant on the Mississippi has a daily capacity of 150 million gallons, which will be no more than sufficient to meet the demands of the city by 1925. It is clearly evident that the city should make provision for a new source of supply sufficiently far in advance of that date to enable the construction of a suitable plant. The Water Commissioner suggests that a new plant be located on the Missouri River for several obvious reasons, i. e., character of water, easy gradient to southern portion of city where future supply will be most needed,

good storage sites, etc. A detailed statement of future water supply is here impossible. No more urgent consideration, however, could now be brought to the attention of the citizens of St. Louis.

While a goodly proportion of the present city is now supplied with sewers, there is need of additional facilities in districts which have become densely populated, with the result that present sewers are taxed beyond their capacities. The disposition of storm water in the River des Peres Valley has also become a problem of increasing importance, the floods due to heavy rain-falls in this watershed having become a menace of increasing proportion. The completion of the new Mill Creek Sewer now affords an outlet for several district sewers greatly congested. In many of the latter additional main line connections are needed while in several of the outlying districts a constantly increasing population has necessitated additional main line connections yet to be built. A complete discussion of the future sewer requirements cannot here be given, however. In the annual report of the President of the Board of Public Service for 1916 will be found a most careful analysis of the sewer requirements of St. Louis.

### **Purpose of a City Plan**

For some time past the City Plan Commission has been acquainting itself with the physical, economic and social conditions of St. Louis. To devise a city plan without the most accurate knowledge of existing conditions, would be but to build a structure without foundation upon which to stand. A plan which is based on fancy instead of fact is as a leaf blown hither and thither by every zephyr of loose opinion on public matters. With much of the necessary information at hand and additional material rapidly being gathered, the Commission



**Plan No. 2.**—The development of the city has followed the natural topography. Residences occupy the high land in the central and western portion, industries follow the low lands along the Mississippi, the Mill Creek Valley, and the River des Peres.

is now engaged in devising the ways and means for guiding future constructive work—streets, transit, transportation, recreation, housing, districting, etc. A complete and practical city plan, once prepared, adopted and understood, flexible only within reason and necessity, will do more for St. Louis than any single or collective effort possible. The presence of such a plan will not obviate or mitigate unpleasant or undesirable evils, but it will do much to obviate the spread of those evils, will curb the chaotic, haphazard and uneconomic growth now proceeding with unabated vigor, and will make possible needed public improvements such as street extensions, widenings and straightenings, rapid transit, parks and playgrounds, industrial areas, at costs which are not prohibitive, but which will become so if too long delayed.

To think of a city as anything other than a unit, an organism whose life and health depend upon the successful performance by *each part* of its necessary function, is to do the city an injustice, is to believe, as so many have heretofore believed, that in some unknown or unsuspected way, great municipal questions will just naturally solve themselves without undue mental exertion or effort upon the citizen's part. Cities are nothing more than great business institutions wherein the human factor plays a leading part. A definite organization and a definite policy must be had to produce best and most desirable results, economy of operation and maximum service. *The city plan constitutes the city's policy in the guidance of physical and social growth.*

There is a direct relation between intensity of development and economic city expansion. A low intensity of development, i. e., few people to the acre, scattered over a great area with consequent widely separated districts for business, residence and industry, would involve unwarranted and even prohibitory costs for such necessities as paving, sewers, water, transit, etc. An in-



tensive development, on the other hand, with many people to the acre, would cause congestion, which in turn would necessitate tremendous costs for certain necessities, such as transit, while the lack of adequate light and air would exact immeasurable toll in human life. These are the two extremes with which all cities must contend. There are certain prescribed standards for all classes of development, but when the actual control of land is with the land developer and not with the city, the standards are unknown or ignored and the city is forced to contend with conditions adverse to its own best interests and the general welfare. There are certain generally accepted standards of intensity of development to which it is impractical always to conform. The aim of city planning is to secure intensity of development in various parts of that city most compatible with the demands of health and economy. With cities constantly becoming larger and civic problems ever increasing in magnitude, the more pressing becomes the need for a scientific determination of each city's needs sufficiently far in advance to warrant due preparation and to avoid prohibitive costs.

### **City Planning in St. Louis**

As a result of various city planning activities, a vast fund of useful information is now in the possession of the City Plan Commission. A wide interest has also been created, but successful execution of city plan work depends upon universal understanding rather than casual acquaintance with the subject.

The purpose of this book is to call attention to the principles of, and necessity for city planning in St. Louis, to show parallel conditions in other cities, and, in a general way, to present not only the problem but the nature of its solution. In the presentation, free use has been made of information at hand, as well as data from out-

side sources too numerous for mention, reports of other cities and extracts from various texts which now comprise the very respectable collection of city and town planning literature, for which due credit is gratefully given.

The program of procedure to be followed by the City Plan Commission contemplates separate studies of each of the fundamentals of a city plan—streets, transit and transportation, markets, recreation, grouping of public buildings, districting, housing and street appearances, also special study of such problems as that of the River des Peres. Following the completion of each of the studies mentioned, all will be correlated and revised into the complete Comprehensive Plan.

The excellent spirit of friendliness and co-operation existing between the City Plan Commission, city officials, business interests, public and semi-public organizations, is not only fortunate and pleasing, but such relations are essential to the proper execution and accomplishment of great public work, and particularly in a city so great as St. Louis.

St. Louis is confronted with the necessity for many public improvements. The prompt and proper attainment of these improvements rests not so much with public officials, as with a united and enlightened citizenship. A high degree of public spirit is demanded to insure the open, frank and intelligent facing of the issues.

We are proud of our city, and rightfully so, but that our pride may not become pure boastfulness, that our city may keep abreast of the times, and that here we may have and enjoy the benefits of modern urban life, must ever be our desire and our concern.



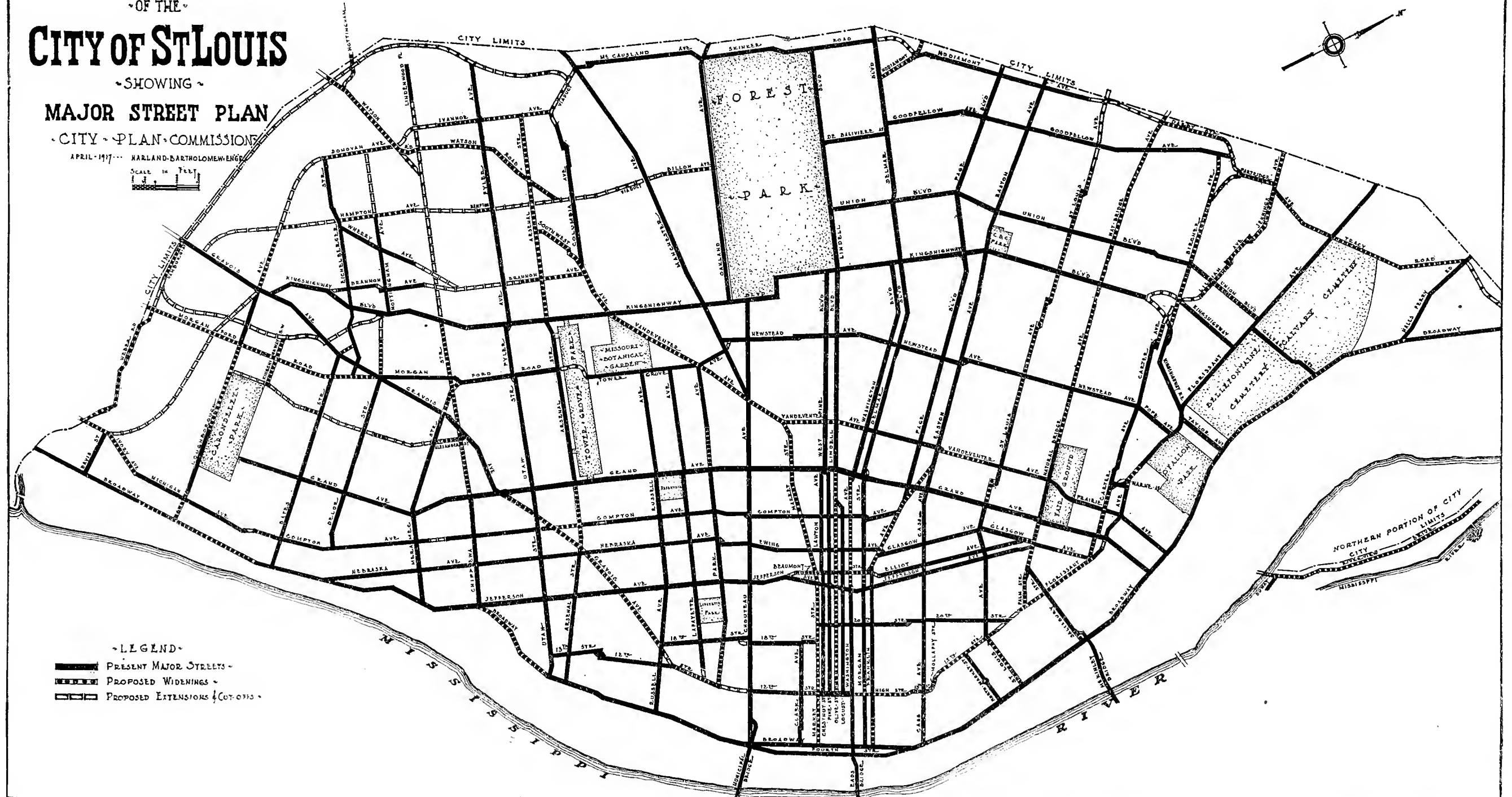
# MAP OF THE CITY OF ST. LOUIS

SHOWING  
MAJOR STREET PLAN

CITY PLAN COMMISSION

APRIL 1917 HARLAND BARTHOLOMEW, ENGINEER

SCALE 1 IN. = 1 MILE



## LEGEND

- PRESENT MAJOR STREETS -
- PROPOSED WIDENINGS -
- PROPOSED EXTENSIONS & CUT-OFFS -



## A MAJOR STREET PLAN FOR ST. LOUIS

The average town or city dweller is quite apt to pay little more attention to the streets he uses than to the air he breathes; he takes them both for granted. His business or his pleasure requires that he get about from place to place, and he uses the streets as he finds them, with a sense of satisfaction when his way is direct and free from interruption, and of irritation when opposite conditions prevail. Generally, it is only when undue congestion impairs the free flow of traffic that he begins to realize the importance of an adequate system of streets, just as he realizes the value of clean, pure air when his surroundings become smoky and grimy; but if the importance of the subject is once appreciated, it becomes evident that the future growth of the community, as well as its present stability, is absolutely dependent upon the development of suitable avenues of travel, and that even very considerable sums expended to secure them will in the long run be many times repaid. It is very easy to understand that if a business district is built up in a section characterized by narrow or non-continuous streets, the resultant congestion may easily become so great that one of two things must result: either the streets must be widened to provide the necessary traffic room, or the district must be abandoned in favor of another where conditions are more satisfactory; either method is costly, but the latter is prohibitively so.

If cities could be designed in advance, the problems to be solved would be similar to those encountered in the design of any structural unit. The streets could then be laid out of sufficient width to carry the traffic that would flow through them by virtue of their relation to the districts they serve; they could be made wide and direct between important centers, and narrow and curved in residence districts where heavy through traf-

fic is neither necessary nor desirable. Unfortunately, however, few cities have been planned in such a systematic manner, and city planning, so-called, is therefore largely concerned with remedying the mistakes of the past, and guarding, so far as possible, against their recurrence in the future. Such mistakes become glaringly evident when their effects are seen in congestion of traffic where lack of foresight led to narrow streets in busy centers, in burdensome special assessments for wide streets where narrow ones would be quite sufficient, and in declining property values in districts whose usefulness has been impaired by inadequate means of access and egress.

### **The Influence of Street Plan**

No finer example of the influence of good and bad street plan upon city life and city growth can be found than in St. Louis. Along the river front from Spruce street to Washington avenue are the little old streets, thirty and forty feet wide, first laid out by the French in 1766. Here was copied the checkerboard plan used by Wm. Penn in Philadelphia, even to the names—Pine, Chestnut, Locust, Olive, Market, etc. The extreme narrowness of these streets for modern city use has contributed probably as much as, if not more than, the decline of river traffic, to the apparent idleness which today distinguishes this part of our city. On the other hand, it would be difficult to find a more substantial type of urban residence development than in the so-called "Cabanne Addition," where pleasant homes abound on wide, occasionally winding streets with comparatively small tree-lined roadways.

The universal adoption and extension of the original checkerboard plan of streets has proven most unfortunate to St. Louis. Although the original narrow street width was replaced by the more ample average standard



**Illustration No. 2.**—Looking east from Broadway on Olive street one sees the narrow streets first laid out in St. Louis. These streets have a width of about thirty feet which greatly restricts all that portion of the city between Fourth street and the Mississippi River.

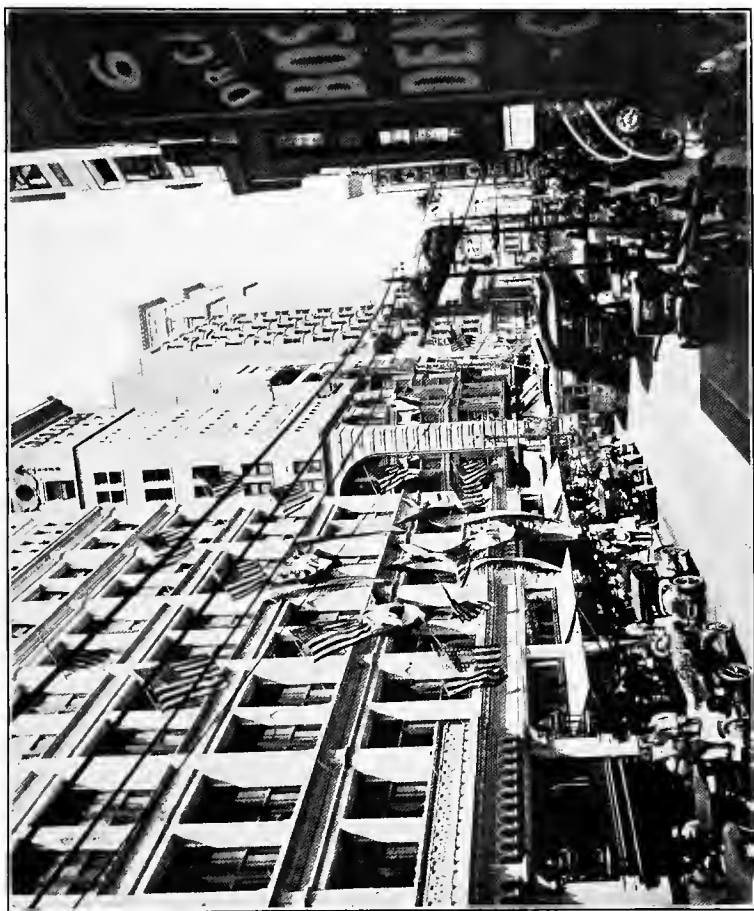


width of sixty feet, the value of broad radial avenues does not seem to have been realized. This is natural enough, for so long as a town is relatively small, with a single definite community center, and with a unity of purpose expressed in a public building or two, growth will proceed generally without thought of relation to possible future secondary centers. But as growth proceeds, there inevitably comes a stage when such subsidiary centers develop spontaneously, and both convenience and necessity require that each of them be tied to the principal center and to one another. Sheer good fortune, aided perhaps by the original topography of St. Louis, is responsible for the fact that this city possesses a rudimentary system of such radial streets, more or less continuous, that now extend fanwise from the business center, as for example, Broadway, Gravois avenue and Easton avenue.

### **Functional Street Planning**

The building of a city is such a highly artificial process subject to such revolutionary changes in methods of transit and transportation, that it is questionable how far the needs of another generation can be anticipated. Yet it has become quite evident that there are certain well-defined classes of streets which the individual landowner cannot so readily recognize as can one who has the whole city problem in mind. Only recently has the necessity and value of public control of street planning been recognized. Public control of street plan cannot entirely anticipate every need, but such control, when wisely exercised, can scarcely fail to improve immeasurably many unpleasant and unsatisfactory conditions.

Through such control as the city now exercises over the subdivision of land for public purposes an attempt is being made to so plan streets that their distinctive functions may be clearly discernible. In general, there



**Illustration No. 3.**—As St. Louis grew west from Fourth street a width of 60 feet in place of 30 feet was adopted for most streets. This view shows Olive street at Seventh. The complete inadequacy of a 60 foot street containing a trolley line as a traffic thoroughfare is well illustrated. There is room for but one automobile between car and curb, and this space is usually occupied by standing vehicles.

are three classes of streets in St. Louis, (1) the large radial thoroughfare leading directly to the business center, which is the main artery for traffic; (2) the cross town thoroughfare which usually accommodates a trolley line, considerable traffic and some business development; and (3) the minor residential street for homes only.

The adoption of a well-defined policy of differentiation in width of street, of roadway and character of paving will soon produce results more satisfactory than have been achieved heretofore. On the radial thoroughfares and cross town streets the first essentials are ample width, directness and continuity. On minor residential streets width and directness are no longer considered essential. In fact, on these minor residence streets a roadway width sufficient only for the purely local traffic when combined with more or less irregularity in alignment discourages the use of the street for traffic purposes, gives more room for parking space and adds greatly to the desirability of the street for residential purposes.

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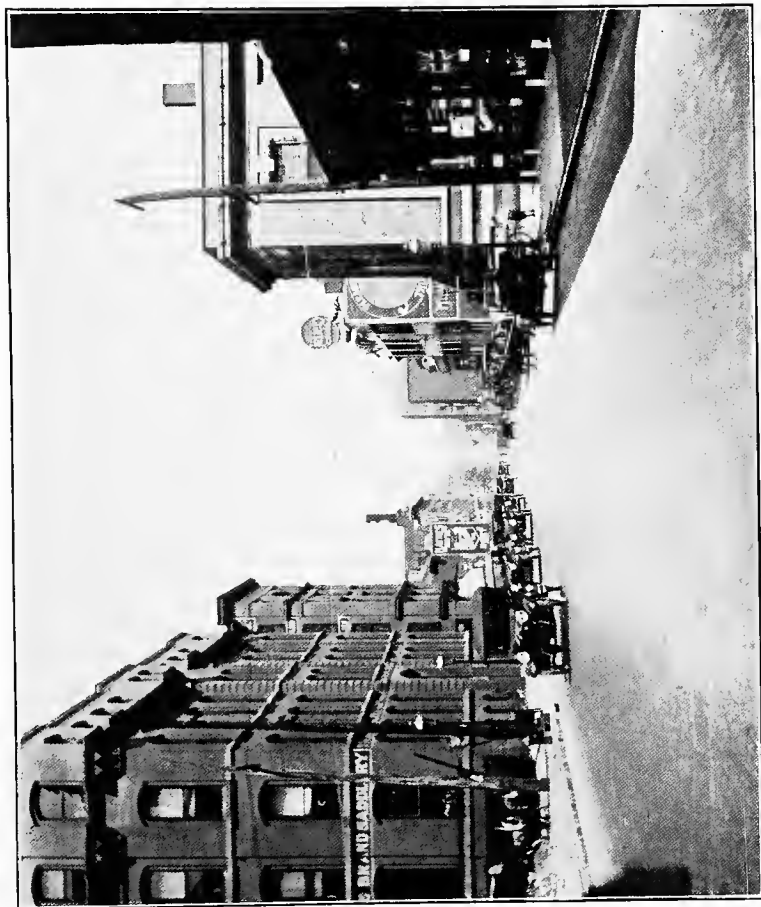
### **Results of Traffic Census**

To determine the character and extent of traffic movement on the streets of St. Louis, a detailed traffic census was made in April and May, 1916, each period of observation covering eleven continuous hours, from 8 a. m. to 7 p. m. Counts were made on typical week days, not including Saturdays or Sundays.

This census disclosed numerous interesting and valuable facts which can be summarized in part as follows:

Horse-drawn traffic not concentrated on particular streets or in particular sections.

Automobile traffic greatly concentrated on certain routes offering least obstruction to through travel and having smooth surface pavements.



**Illustration No. 4.**—Locust street is a practical example of the capacity of a sixty foot street as a traffic thoroughfare where there is no trolley line. From 5 p. m. to 6 p. m., on a typical day, 1743 vehicles were counted on Locust street between Jefferson avenue and Beaumont street.

Need for more uniform distribution of east and west-bound traffic.

Need for better approaches to business district from north and south.

Of 323,869 vehicles counted at 245 points on 84 different streets, the number and character of vehicles, and their percentage of the whole, were as follows:

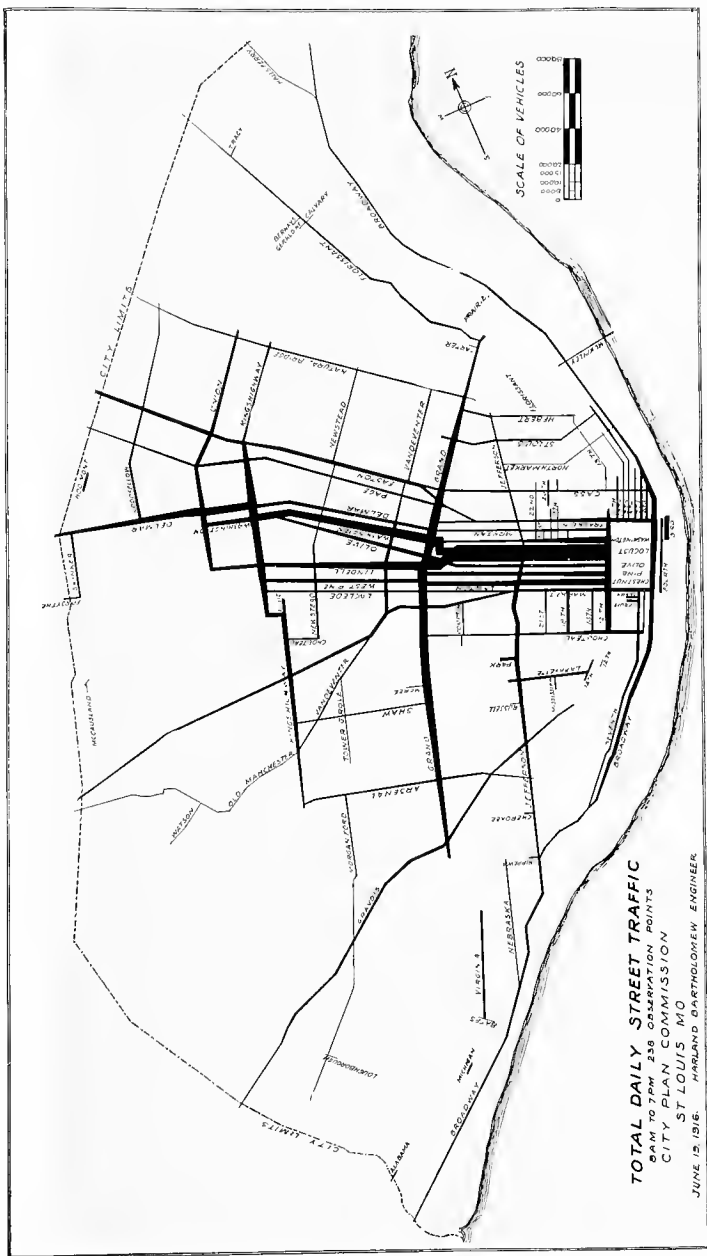
	Number	Per Cent
Horse drawn .....	102,168	31.5
Passenger Autos .....	169,365	52.4
Auto Trucks .....	52,336	16.1
Total .....	323,869	100.0

The business district is the principal objective of all traffic. Since this district is in the extreme eastern central part of the city, there are three means of approach—from the north, the west and the south. The following table shows the character and percentage of all traffic entering and leaving the business district according to its direction:

**Traffic Entering and Leaving Business District**

	Vehicles	Per Cent	Street Cars	Per Cent
South .....	7,421	19	1,676	18
West .....	19,578	51	4,260	47
North .....	11,335	30	3,105	35
Total .....	38,334	100	9,041	100

The similarity in percentage of vehicular and street car traffic entering and leaving the business district from the various directions is indicative of the fact that both classes of traffic find accommodation in the same general directions and in a general way attempt to use the same thoroughfares. Some of the traffic entering and leaving the business district from the west eventually goes either north or south, as shown by Plan No. 4.



Plan No. 4.—The concentration of traffic on certain streets empha sizes the need for developing other streets now existing but not used because of improper width or poor conditions. This is especially true north and south from the business district.

Arbitrarily dividing the south, central and west and north sections of the city by the Mill Creek Valley and by Easton and Cass avenues, the distribution of population is approximately as follows:

**Estimated Distribution of Population (1910 Census)**

	Population	Per Cent
North (north of Easton and Cass avenues).....	210,007	30
West and Central (between Mill Creek Valley and Easton and Cass avenues) .....	217,333	32
South (south of Mill Creek Valley).....	259,689	38
Total .....	687,029	100

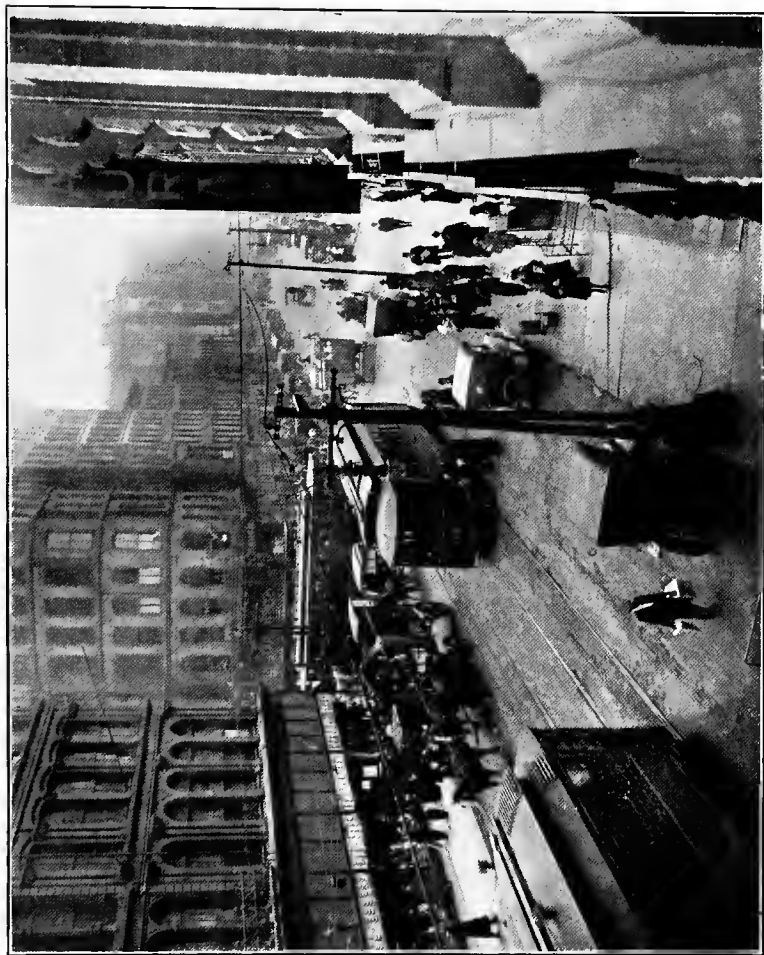
Comparing this with the percentage of traffic entering and leaving the business district from the same general directions, it is quite evident that traffic facilities are not at all proportional to the distribution of population—a further justification for principal street connections to these districts.

**Percentages by Districts of Population and Traffic**

	Traffic Entering Business District	Per Cent of Total Population
North .....	30	30
West .....	51	32
South .....	19	38
Total .....	100	100

### **Preparation of the Major Street Plan**

A study of street planning in St. Louis, covering many months of careful work, numerous public hearings, supplemented by the detailed traffic census, has led to the preparation of this "Major Street Plan" which, in effect, contemplates a completed system of streets of such dimensions and so situated as to afford ample opportunity for the expeditious movement of the greater proportion of traffic within the city.



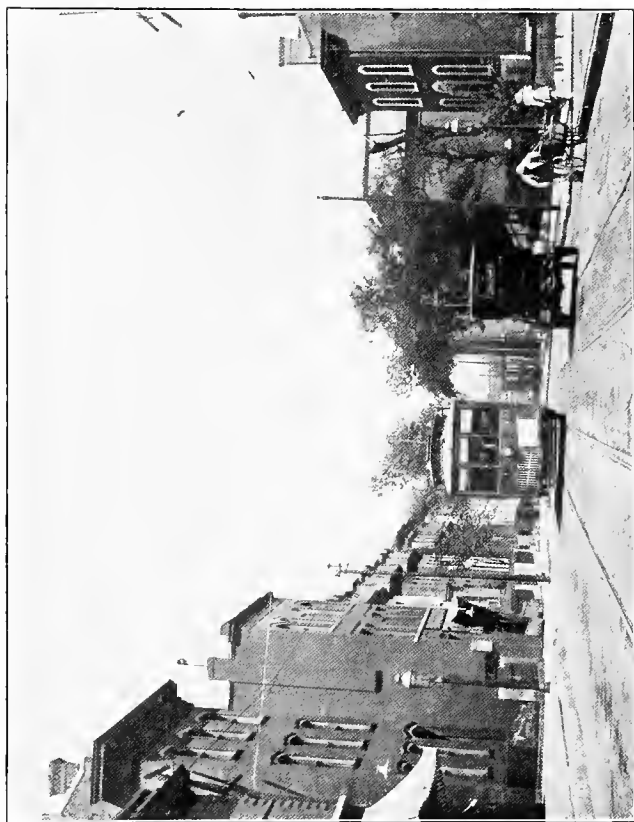
**Illustration No. 5.**—Washington avenue has a width of 80 feet in the business section. It typifies the minimum width major traffic street with trolley line as suggested in this report.



In a city that is fairly compactly built up, changes in the street plan can be made only at great expense and must be justified by circumstances. Thus, while the major street plan here proposed may fall short of ideal standards, the recommendations, taken as a whole, comprise a system of major streets which is at once comprehensive, sufficiently anticipatory of future needs and altogether justifiable. As is usual in the case of all plans for work designed to meet the needs of an unlimited future, it is to be understood that specific recommendations are to be carried out as circumstances will permit, not necessarily all at once, but always in accordance with a predetermined plan.

The actual determination of the major street plan has been arrived at only after securing all available information and after having carefully weighed and considered its value. Many of the conclusions reached are in agreement with the views held by numerous individuals and organizations and nowhere do they substantially digress from views already generally accepted throughout the city. The plan differs from previous recommendations chiefly in that a broader interpretation has been given to the reason and need for such improvements, each detail having been considered in its relation to the entire city rather than to the particular locality concerned.

The major street plan herewith presented might be criticized as not being sufficiently comprehensive, in that certain parts of the city much more extensive suggestions for betterments could have been made. While the Commission has possibly laid itself open to criticism in this respect, it has, nevertheless, felt that the plan suggested will provide for the needs of many years to come, without prohibitive or unjustifiable expense. The Commission seeks to pave the way for early accomplishments rather than to create ideals impossible of realization.



**Illustration No. 6.**—An ordinance now pending provides for widening Washington avenue from 60 to 80 feet between Jefferson and Grand avenues. The street, as now constituted, is wholly incapable of accommodating the great volume of vehicular travel that otherwise would use it. The proposed widening will be accomplished by taking 10 feet from either side of the street, thus escaping many buildings.

### **The Value of a Major Street Plan**

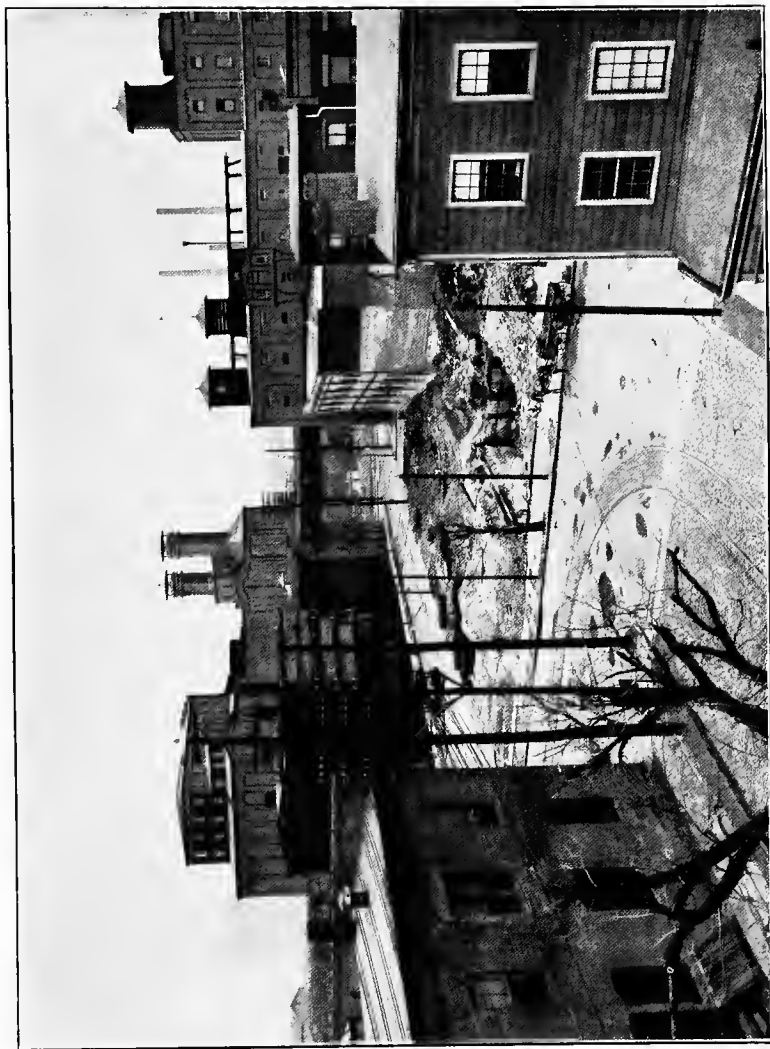
The advantages of a complete major street plan such as is herewith suggested should be obvious. It will permit of a traffic capacity many times that of today. The unity of the proposed plan is not the least of its distinguishing features. Streets designated as major streets have no dead endings; each of them is made a continuous highway by providing connections with other existing links in the system, thus greatly enhancing traffic efficiency.

Once the major street plan has been adopted it would naturally follow that suitable pavements for heavy traffic would be laid. A marked saving in expense to the community should eventually result from what would probably become a well-defined policy of laying pavements in accordance with the character of the streets, the total paved area of heavy traffic streets being small as compared with the paved area of light traffic streets. Wood block or asphalt would be most desirable pavements except where the character and volume of traffic is heavy enough to warrant the use of smooth surface grouted granite block pavement.

A uniform system of lighting the major streets such as is now used on Lindell boulevard and Kingshighway would lend a distinguishing character to these streets, while the annual removal of four miles of poles and wires on these streets, as provided by ordinance, would still further distinguish them. Careful tree planting along these major streets would give ample opportunity for demonstrating practical aesthetics.

### **Major Streets and Rapid Transit**

When cities approach the million population mark, rapid transit becomes imperative. Actual rapid transit must be above or below grade. The streets furnish the



*Photograph kindly furnished by Newark City Plan Commission*  
**Illustration No. 7.**—The widening of Front street, Newark, N. J., shown herewith under construction, is characteristic of several street openings now necessary in St. Louis.

right of way for the majority of future rapid transit lines. By reason of certain improvements suggested in the proposed plan, it will be possible to greatly improve existing transit service by more direct routing than now exists. A complete transit plan for St. Louis should be prepared at an early date.

To a certain extent, the width of streets where rapid transit lines will find accommodation should be determined only after the character of construction for the rapid transit line has been determined. The extreme length of all streets in St. Louis makes increased width unusually expensive, so that a width of only 80 feet is proposed for most major streets, while a width of at least 98 feet has been suggested on all streets where rapid transit lines will first be built. In this connection, it is of interest to note that in Philadelphia a width of 148 feet is being planned for major streets which are to accommodate rapid transit lines.

### **Width of Major Streets**

Approximately three-fourths of St. Louis' 940 miles of streets have a width of sixty feet. It seems impossible to justify the almost universal adoption of this dimension. Custom is its only excuse. For all practical purposes a width of sixty feet is too great for residence streets, especially since set-back lines are so widely in use, while for principal traffic streets the sixty-foot width is altogether inadequate. Ample lot and block dimensions in St. Louis have caused the city to spread over a great area. While not too great a proportion of area has been devoted to streets, cost for acquisition, improvement and maintenance has placed an undue financial burden upon property owners, because of the great number of unnecessarily wide streets.

The problem of providing adequate width on any complete system of major streets has therefore been un-

# MAP

OF THE

## CITY OF ST. LOUIS

SHOWING

ALL STREETS HAVING A WIDTH

GREATER THAN 60 FEET

CITY PLAN COMMISSION

MADE BY ENGINEER

ST. LOUIS, MISSOURI

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Plan No. 5.—Lack of city control of land subdivision in St. Louis has resulted in the most haphazard distribution of streets over 60 feet wide, shown herewith. The many miles of wide streets, properly connected, would have made a most desirable and complete system. Now there is no system and great economic waste is evident.

usually difficult, not merely because of the predominance of 60-foot widths, but because of the unusual length of all streets. Plan No. 5 well shows the very indiscriminate planning of streets in St. Louis which have a width of more than sixty feet. Likewise, a map showing the distribution of population and its relation to the proposed major street plan forcibly illustrates the need and justification for such a plan.

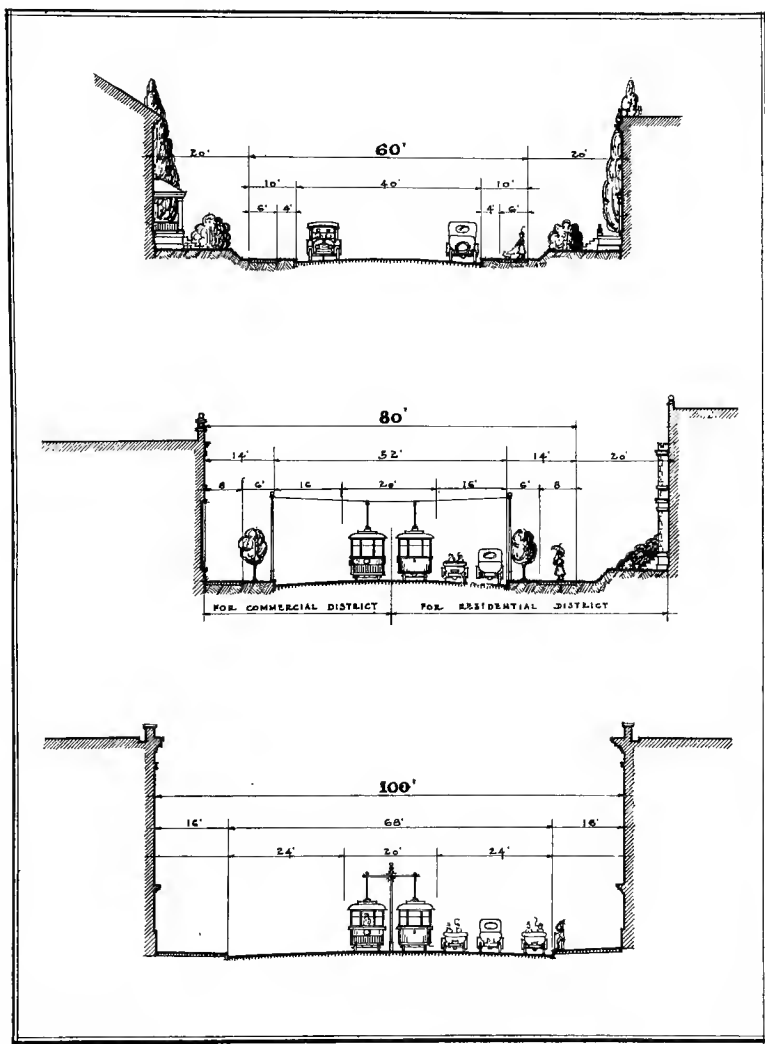
A further complication in the problem of securing an adequate system of major streets has been that many of the streets so situated as to necessarily be included in the plan, are occupied by double track trolley lines. In view of these conditions the following standards were adopted early in the study of this problem, not because they permitted an ideal solution, but because it would be impossible to widen many streets having the uniform 60-foot width, while at the same time it was necessary to fix an absolute minimum for certain conditions.

#### General Standards for Determining Width of Major Streets

Without Trolleys	60' minimum.....	(2 sidewalks 28'—4 vehicles 32')
	80' where possible.....	(2 sidewalks 32'—6 vehicles 48')
With Trolleys	80' minimum.....	{ 2 sidewalks 28'—4 vehicles 32' }
		{ 2 trolleys 20' }
	98' where possible	{ 2 sidewalks 30'—6 vehicles 48' }
		{ 2 trolleys 20' }

### The Business District

No better demonstration of the need of a definite city plan for St. Louis can be found than in the striking change in character of large districts throughout the city. This instability of development with consequent decline of property values has caused tremendous financial losses and the end is not yet. While the city plan cannot altogether alleviate this evil, it is certain that nothing can be conceived which would so tend to stabilize conditions and curb the evil as the adoption of a



Plan No. 6.—Proposed sections of major streets.



definite plan. Intelligent city planning aims solely to accomplish this very desirable situation—stabilizing and improving past, present and future development.

The business district of St. Louis has experienced and still continues to experience considerable instability. The time was when Broadway and Market street, as well as Broadway and Franklin avenue, were the centers of business activity. Olive street, between Fourth street and Tenth street, experienced flourishing business activity and still is a most important street, but Washington avenue is fast becoming the leading business street of today. Not so great a loss resulted to the merchants of earlier days when the business center shifted away from Broadway and Franklin. The same cannot be said of Broadway and Market, as witness the Southern Hotel, now closed, and the depreciation of property in general near that center.

No consideration of major streets for St. Louis would, therefore, be acceptable or complete which did not carefully take into account the past as well as the future of the business district, the principal objective point of all traffic. Furthermore, the welfare of the city depends largely upon the stability of development and values, most especially in the business district where the greatest values are found.

After due consideration, the following major streets have been fixed as boundaries of the business district—Twelfth street, Washington avenue, Fourth street and Market street. Because of the proximity of the Mill Creek Valley with its numerous railroads and incidental factories and warehouses, the business district will not extend south of Market street. The treatment of the river front will largely determine the character of development east of Fourth street. This latter district should become a center for large wholesale houses, which could there obtain the advantages of rail and water ship-



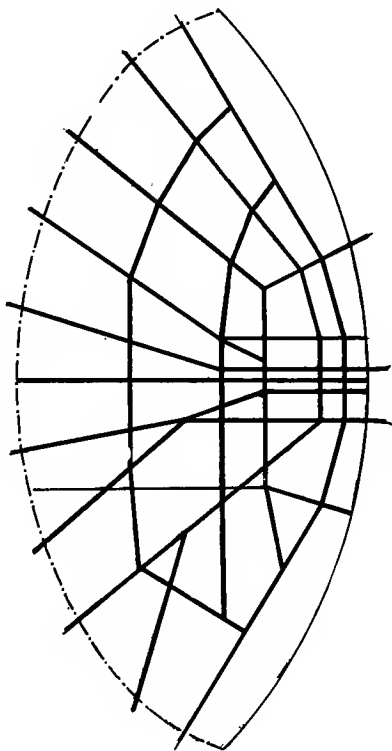
*Photograph kindly furnished by Public Service Commission, First District, New York*

**Illustration No. 8.**—Varick street, New York City, was recently widened from 65 feet to 100 feet by taking 35 feet from one side of the street, as shown in the illustration. A new subway line is now being constructed. This is an example of street improvement which St. Louis must soon undertake. The irregular building line caused by the widening of the street demonstrates the need of excess condemnation for such improvements.

ments, and have the added advantage of close contact with the business district. On the north it is questionable whether conditions will ever warrant the spread of the business district beyond Washington avenue. The fact that Washington avenue is now very nearly, if not actually, the principal business street, and the further fact that Franklin avenue is daily becoming a more important business street, although of strong local tendencies, may warrant the extension of the business district to Franklin avenue. The presence of the Union Station at Eighteenth street, numerous hotels between Twelfth and Eighteenth streets, and the fact that the greater proportion of traffic to and from the business district is from the west, may sooner or later cause the business district to spread west of Twelfth street.

The present problem, however, as previously stated, is to encourage the stabilization of values and, consequently, development within the PRESENT confines of the business district. The fixing of principal streets, which in turn largely determines the future movement of traffic and especially transit lines, should do much to accomplish the desired end, if properly and wisely conceived. The suggested confines of the business district will permit of considerable growth and if St. Louis experiences continual growth, as it inevitably must, the opportunities for expansion of the business district to the north or west of its present boundaries should be no occasion for concern, but rather indicates the necessity for avoiding the construction for present needs of what may become future obstructions.

The location of the business district with regard to the city at large is also a matter worthy of serious consideration, since its position at the extreme eastern edge of the city (see Plan No. 11) has brought forth the comment that it might some day shift to the more natural physical center of the city at Grand and Olive, where a



*DIAGRAM OF MAJOR STREET PLAN  
CITY OF ST. LOUIS, MO.  
CITY PLAN COMMISSION  
ST. LOUIS, MO.  
HARLAND BARTHOLOMEW ENGINEER.*

**Plan No. 7.**—The basis of an excellent major street plan already exists in St. Louis. Certain widenings, extensions and connections are needed to complete the system. Each of the lines in the diagram represents an existing street.

substantial business and "night life" center has already come into existence. A thorough acquaintance with all conditions entering into such a consideration, however, gives sound basis for belief that such a shift neither will nor can take place. The present business district is at the physical center of the METROPOLITAN DISTRICT, which includes all those communities to the east of the Mississippi, and which communities contribute more than a fair share to, and are fully as dependent on, the so-called business district of St. Louis, as the city of St. Louis itself. Even should some of the amusement enterprises and possibly a few or even many of the hotels and large retail businesses see fit eventually to remove to the vicinity of Grand and Olive, the possibility is remote, since few businesses could afford to forego the very substantial and ever-increasing amount of business coming from east of the river. And the offices, commercial institutions, wholesale and warehousing concerns, which constitute the great bulk of the business district, can never consider removal from what is now and what will continue to be the physical center of *all* activity.

Of all the streets in the business district, only four—Broadway, Twelfth, Washington and Fourth—have widths of more than sixty feet. The streets are laid out on the rectangular pattern, approximately 270 feet apart. Since these streets are lined with costly buildings, it would be extremely difficult to attempt widening; consequently only one recommendation for change has been made, and this after prolonged deliberation—the widening of Market street, the southern boundary of the business district.

The principal objective has been to facilitate circulation ABOUT the business district rather than THROUGH it.

A complete analysis of the transit situation in St.



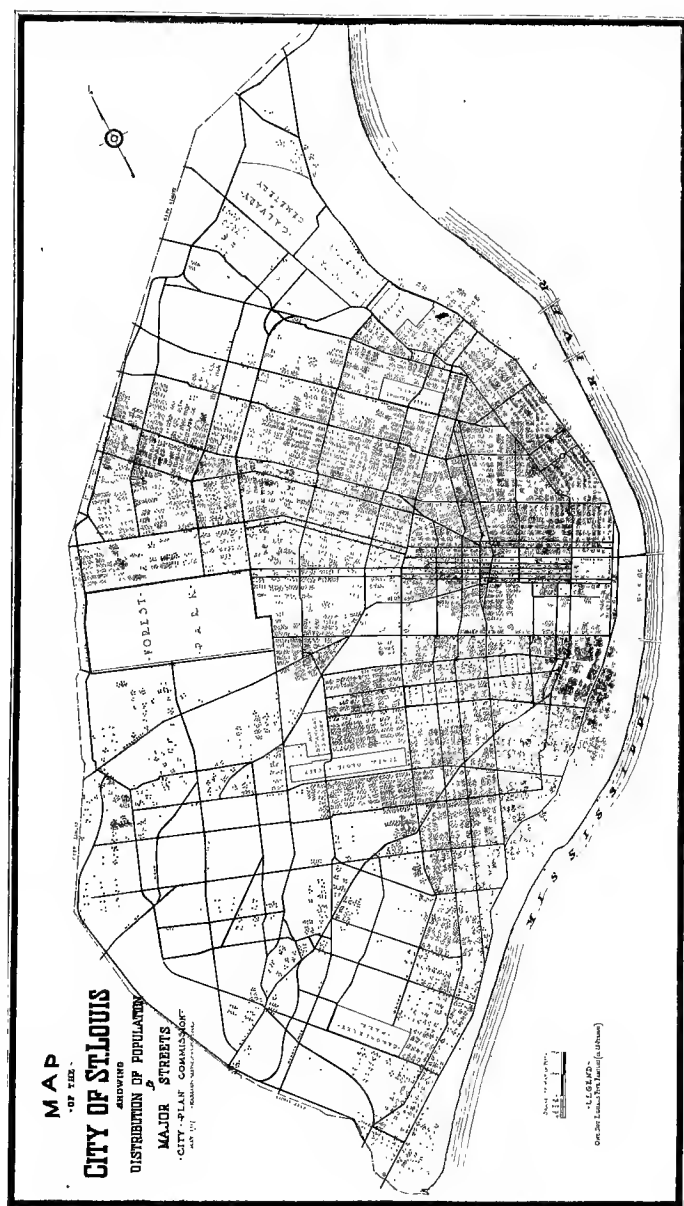
Louis is contemplated by this Commission at the earliest opportunity. Such a study will center largely about the business district. The multiplicity of surface tracks in the business district today does not tend to facilitate or expedite either vehicular or transit movement. Rapid transit lines, terminating in the business district, when built, must be underground. The Eighth street tunnel offers the logical opportunity for such lines and other routes can be opened as occasion demands, beneath the major streets which bound the business district.

### **Legislative and Financial Measures**

The ability of a city to execute a complete or comprehensive city plan centers largely about the method of meeting its cost. The more nearly costs can be so distributed as to create confidence that injustice has not been done, the easier will be the task of carrying the city plan to completion. In parts of the city where few streets have been built and few houses erected, much effective planning can be accomplished without excessive difficulty. Quite naturally, however, the most important city planning work, and consequently the most expensive, occurs in those parts of the city where most of the land is fully occupied for public or private purposes. This may be more properly termed "replanning," the readjustment of old communities to meet new conditions and new demands.

Readjustment requires many special financial as well as legal measures. While radical departures in finance or in law are debatable, there is sound basis for them in the fact that they are not the result of a desire to overthrow conservative precedents, but a justifiable attempt to meet new conditions altogether without precedent.

St. Louis is a conservative city. Its conservatism is a source of just pride. Of the largest cities in the United States, St. Louis is the only city living within



**Plan No. 9.**—The major streets have been planned for greatest possible use. Practically all portions of the population are no more than one-fourth mile from a major street.



its income. In point of sound finance it is the leading large city of the United States and there is no reason why its leadership should not be maintained.

St. Louis is a growing city and there is a desire to encourage growth so long as that growth is wholesome and desirable. But continued growth involves certain readjustments in the city structure caused by a failure to anticipate the needs of a city rapidly approaching the million population mark. The suggestions for the readjustment process which follow are not experimental. New York, Chicago, Philadelphia and many smaller cities are making use of new powers in one form or another. St. Louis cannot afford to ignore its present problems. It must meet these problems in the same progressive way as other large cities, especially since the wise adoption of progressive measures will strengthen rather than impair its financial leadership.

Nothing has so served to stimulate antagonism to public improvements of all kinds as the so-called "benefit assessment" or "special tax." So great has become the burden of special taxes in many parts of the community that it is with great reluctance and trepidation that new projects are proposed. Yet improvements are necessary and they must be paid for. Not all improvements are of city-wide benefit, and where local benefit is clearly evident, the special tax is justifiable if intelligently applied.

With regard to widening or extending streets in built-up sections, there are three points which are worthy of careful consideration:

- (1) The benefit district.
- (2) Distribution of cost.
- (3) Methods of payment.

#### **The Benefit District**

St. Louis has executed several street reconstruction projects in recent years from which valuable lessons can

be learned. In many cases decided objection has been made to the amount of benefits assessed. The report of the Commission for widening Washington avenue, just published, demonstrates a progressive attitude and a realization of the principles involved in assessing the cost of an improvement which is a noteworthy advance over previous reports of similar Commissions. No benefits were assessed against property on streets parallel to the improvement. It would have been difficult to show direct benefits to property on parallel streets resulting from the widening of Washington avenue between Jefferson and Grand avenues. In such other street widening or extension as has been carried out in St. Louis, great objection has been raised to benefit assessments by property holders on parallel streets. While there may have been justification for such assessments, there should be established a well-defined rule for levying special taxes in all street widening or extension projects. This would greatly lessen objection and facilitate the proceedings now so often greatly delayed.

The rule of assessing benefits for street widening or extension in New York City is that the benefit district is usually considered to extend half way from the street to be improved to the next parallel street of equal or greater width; rarely does this district extend more than 1,000 feet from the improvement. The report of the Washington avenue Commission would seem to indicate a similar tendency in St. Louis, though no fixed rules have been formulated. Traffic capacity might be fully as important a consideration as street width in fixing benefit districts, though these are very intimately related. Any rule should be susceptible of broad interpretation and should be sufficiently flexible to meet varying conditions.

A further principle which should seem to apply more generally than has been customary in the past, is to ex-

tend the benefit district to include all properties which by reason of the widening or extension have been given a greater degree of accessibility to important parts of the community and thus not confine the benefit district to the street upon which the improvement takes place, or a portion of that street.

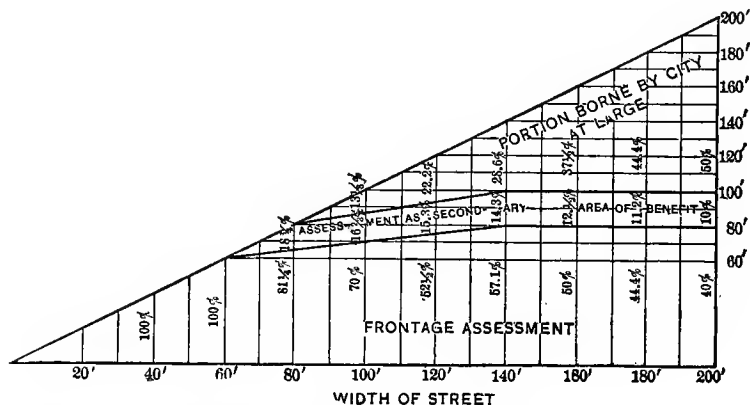
In theory, at least, the old method of fixing a benefit district might be described as drawing a circle about the improvement as a center. The value of the more modern method is to enlarge the area, reduce individual assessments and place the benefit assessment where it really belongs.

#### Distribution of Cost

The proportion of cost in any street widening or extension which should be borne by the city and by the property owners differs according to individual improvements. The following discussion of this subject in "Planning the Modern City," by Nelson P. Lewis, Chief Engineer of the Board of Estimate and Apportionment of New York City, is of interest:

•  
"While no definite rule can be adopted to govern the distribution of assessments representing the district and general benefit, it should be possible to prescribe a method of determining the amount and extent of local benefit, particularly in the case of new streets, boulevards and parks. Let us assume that 60 feet is the maximum width required for a local street; then the entire cost of acquiring and improving all streets 60 feet or less in width may properly be placed upon the property within a half block on either side of the street. In the case of wider streets that proportion of the cost represented by the ratio which 60 feet plus 25 per cent of the excess over 60 feet bears to the width of the street would probably be an equitable proportion to assess the local district. Up to a certain limit property fronting a wide street is more valuable, and it would be manifestly unfair to adopt a rule which would result in making the cost of acquiring a street 70 or 80 feet wide, no greater or possibly

less to the abutting owner than would have been the cost of a street 60 feet wide. On the other hand, after a street reaches certain proportions, additional width will not involve additional benefit. It may be assumed that a share of the expense which would be equivalent to pay-



Reproduced from "The Planning of the Modern City" by Nelson P. Lewis

**Plan No. 10.**—Diagram showing proposed distribution of the cost of acquiring streets of different widths between the abutting property and larger areas of benefit.

ing for a street 80 feet wide should represent the limit of local assessment. This limit would be reached under the rule proposed when the street becomes 140 feet wide. The percentage of cost which would be locally assessed would, therefore, be as follows for various street widths:

Width of Street	City's Share	Property Share
60 ft.	....	100%
70 "	11%	89%
80 "	19%	81%
90 "	25%	75%
100 "	30%	70%
120 "	38%	62%
140 "	43%	57%
150 "	47%	53%
200 "	60%	40%

A rule relating to the amount of an assessment placed upon individual properties now applied in New York City and worthy of emulation is that in no case shall an assessment exceed one-half the value of that property as estimated by the commissioners.

#### **Methods of Payment**

The new charter of St. Louis provides that assessments for public work such as street widening or extension may be paid in ten annual installments. No application of this privilege has yet been made. Where such projects are of great cost it would seem advisable to extend the privilege of making installment payments of assessments over a period of twenty years, particularly where the improvement is of such a nature that direct financial benefit to property owners will not be evident for several years after actual completion of the work. In some cities all payments may be deferred for five years.

The city's share of the cost for any street widening or extension varies according to the project. If the amount to be paid by the city is small, it can well be met out of current revenue, as at present. Where the city's share of the cost is large, it can probably best be met by a bond issue. The term of the bond issue should correspond in a general way to the period of usefulness of the project. Since all street widenings or extensions are of a more or less permanent value, a term of forty or fifty years for such bonds would not be unreasonable. The present inability of the City of St. Louis to issue bonds for a term other than 20 years should be remedied by an early modification of the State Constitution.

The City of St. Louis can now issue bonds only to the extent of 5 per cent on its assessed valuation of property. This limitation is questionable for a great city and could profitably be increased to 10 per cent by an amendment to the State Constitution.

To make it possible to undertake expensive street widenings or extensions that are becoming increasingly necessary, the city should also obtain legislative authority to issue bonds of sufficient amount to complete the entire project at one time, these bonds to be exempt from the debt limitations, and authorizing the use of tax bills covering the improvement as collateral for the bonds. This would entail considerable readjustment of customary procedure, but would be entirely reasonable and justifiable.

#### **Establishment of Building Lines**

When land on the outskirts of a city is first subdivided there is no need for wide streets. While the eventual need for greater width on certain streets may be anticipated, there is not always adequate provision made for such width as may become necessary. A simple means of insuring such width is to establish a building line or set-back, beyond which no building shall extend. The street may have a narrow roadway which can be widened as occasion requires, until the full distance between building lines is occupied, and no great expense or undue hardship will result.

Likewise, where it is desired to widen an existing street having structures already built out to present street lines, it is possible to establish a new building line back of the present line and give all owners of property a period of years, say twenty-five, in which to rebuild or set back existing buildings to conform to the new line, damages to be awarded and benefits to be assessed as under present laws. This is not so desirable a method of street widening as to complete the improvement at one time and permit property holders to benefit at once from an improvement while payments of assessments could be distributed over a period of twenty years, as previously outlined. Yet, where conditions will warrant

gradual widening, the building line method might prove more satisfactory. It has been used in Philadelphia and in some cities of Massachusetts. A law covering this procedure is shown in the appendix.

#### **Permanent Assessment Board**

The method of fixing damage awards and benefit assessments for street reconstruction projects varies in different states. The present practice in St. Louis is to intrust each case to a special commission appointed by the Circuit Court. Experience in various cities and in St. Louis has demonstrated that this is not the quickest or most satisfactory method of handling such cases. The following statement by Mr. Nelson P. Lewis in "The Planning of the Modern City" well summarizes the conditions involved:

"There should be a permanent body which should act in all cases. This body should not be large, and it should be so constituted that its entire personnel could not be changed at once, thus insuring continuity and consistency of policy. They should be broad men whose training should have fitted them for their difficult and delicate duties. The misleading evidence commonly called expert testimony as to existing and prospective values will be of little assistance to them. They should be qualified by experience and intelligence to form their own conclusions."

A proposed law authorizing the appointment of a permanent assessment board in St. Louis is shown in the appendix.

#### **Land Subdivision**

For many years individual owners have subdivided their property into streets and lots to suit themselves, with little or no thought of the community interest in those streets. Even now the city is not permitted to control all street plannings, although most plans for new

street development are first submitted to the city authorities for approval. Future mistakes can be largely avoided insofar as future needs can be anticipated. Yet, an occasional owner still finds it convenient to subdivide his property contrary to the city's interest and there is little effective means of checking what may become a serious obstacle.

The new charter of St. Louis did not adequately anticipate this condition, so that this feature must also be provided for by state law. Many cities in different states have met this condition by requiring approval of the city authorities on all plats of land before they may be filed for record. Such a law for St. Louis has been prepared and is shown in the appendix.

#### Excess Condemnation

To widen or extend streets in closely built up sections of a city usually involves great damage to buildings and injury to private property, such as the leaving of small irregular lots unsuited to building purposes. When such conditions occur it has been found convenient for the city to acquire the remnants of damaged property, or enough more to form suitable building sites facing the new improvement and sell the extra property so acquired. The advantages of such a procedure are to insure a quicker readjustment of property to the new conditions, to insure a satisfactory development of property facing the improvement and to lighten the special tax burden by permitting the city to sell the extra property and recoup the unearned increment of property value. The principal objection to this practice, commonly known as "excess condemnation," is that the city becomes a dealer in real estate. The advantages of this power of excess condemnation unquestionably more than offset its disadvantages, since its abuse could readily be pro-



hibited. While the new charter of St. Louis anticipates its use, an amendment to the state constitution is first necessary. Such an amendment has been proposed and is shown in the appendix. Five states have now passed such amendments to their constitutions.

#### **Fixing Streets on the City Plan**

In the suburban section of a large city such as St. Louis it is possible to insure good street planning, particularly of major streets. The widespread use of the automobile has greatly increased the interest and appreciation of all who are greatly concerned in platting streets as to the desirability of a good street plan and of providing certain wider streets at stated intervals where the ever-increasing volume of traffic can find good opportunity for direct and unrestricted movement. To adequately anticipate future needs and to pursue a fixed policy is of greatest importance. A fixed policy in street planning is necessary to avoid losing sight of first principles when time for actual development takes place. The value of a fixed plan to avoid temporary oversight or occasional lack of foresight is plain indeed. This fixed plan should include the major streets, if nothing more. That this fixed plan may be officially recognized, it is proposed to alter the present practice of proceeding to fix and assess benefits and damages not later than six months after an ordinance for opening a street has been passed, by making it possible to place a street officially upon the city plan and to file no suit to fix benefits and damages until it becomes necessary or desirable to actually open the street. In this way no hardship will be placed upon property owners, while assurance of proper development is secured.

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**Plan Commissions for Small Cities and for Counties**

A city is usually powerless to guide or control development immediately outside its boundaries, yet the necessity for providing harmony of development is recognized and often desired. The smaller cities and towns which border a great city find it difficult, if not impossible, to obtain satisfactory results in city planning. The plans of the small cities which cluster about their larger neighbors should be made with due recognition of the value of a harmonious scheme. These small communities are often so absorbed in local problems that the broad perspective essential to good planning is lost sight of.

There has been devised a method of planning St. Louis County and the different communities therein. It involves the creation of a County Plan Commission with authority to control development, except in towns which may create local commissions. Enabling acts permitting the establishing of a County Plan Commission and local City Plan Commissions were submitted at the last session of the legislature, but failed of passage. A further effort to secure the passage of such measures at the next legislative session should be made. These laws are shown in the appendix.

**Specific Recommendations**

The many changes in streets suggested in this major street plan obviously cannot all be undertaken at one time. As already stated, their accomplishment can only be attained through following a fixed policy over a period of many years. On the other hand, certain of these improvements are of such immediate importance as to warrant early consideration. This Commission, therefore, recommends that steps be taken at the earliest oppor-

tunity for the completion of four specific projects as follows:

Widening of Washington avenue.

Extension of Twelfth street south to Gravois avenue.

Extension of Twelfth street north to Florissant avenue.

Widening of Olive street from Twelfth to Channing.

The widening of Washington avenue has been under ordinance for several years and the report of the Special Commission has been tentatively filed.

The total cost is.....\$552,511.89

City's share ..... 66,714.94

This Commission has already urged the desirability of this widening and again takes opportunity to restate its conviction that this improvement will be of immediate and future benefit to the City of St. Louis.

An ordinance is also pending for the extension of Twelfth street south from the viaduct at Chouteau avenue to Park avenue. This Commission recommends that the present ordinance be amended to provide a direct line and a width of 98 feet. The Commission also recommends that Gravois avenue be extended from Eighteenth street to Twelfth street, this extension also to have a width of 98 feet. Moreover, Gravois avenue, from Eighteenth to Grand avenue should also be widened from 60 feet as at present to 98 feet. This is the one street affording direct access to the business district for the great southern portion of the city. Unquestionably it will become the right-of-way for a rapid transit line. A width of less than 98 feet is inadequate for any form of rapid transit. Greater width would be desirable.

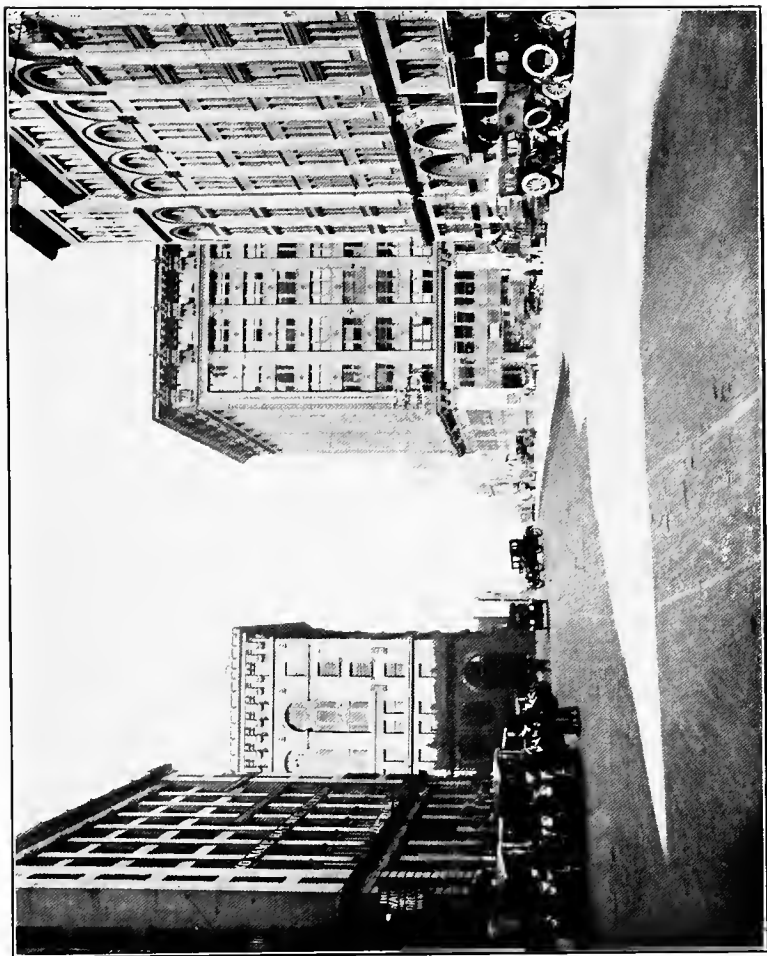
This Commission also recommends that a connection, as suggested elsewhere in this report, be made from Twelfth street at Washington avenue to Florissant ave-



nue at Hebert street, via High street, Thirteenth street and Fifteenth street, the new route to have a width of not less than 98 feet. This route corresponds to the extension of Twelfth street on the south. It would be the one route leading directly to the business district from the great northern portion of the city. Like the southern route, it will become the right-of-way for a rapid transit line to the north, and should have a width of not less than 98 feet. Its connections with Florissant avenue and Natural Bridge road are such as to warrant the belief that it will carry an ever-increasing volume of travel.

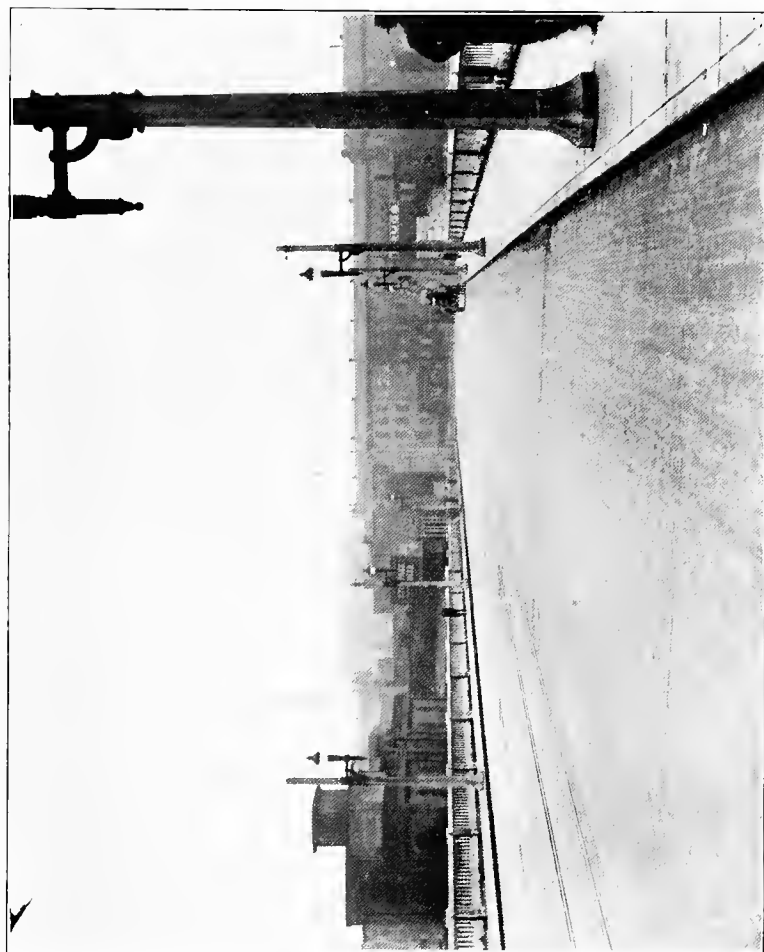
This Commission also recommends that Olive street be widened to at least 98 feet from Twelfth street to Channing avenue. This recommendation, or some adequate alternative which meets with the approval of the majority of owners of property on Olive street, should be undertaken as soon as possible. The inadequacy of a 60-foot street with a double track trolley line as a major traffic street has been well demonstrated. Olive street in its present condition can never become the great business thoroughfare which by reason of its favorable location it naturally should be. Within a few years there will be need for a rapid transit line leading to the business district from the west. There is at present no street which can well accommodate a rapid transit line east of Grand avenue. Olive street is the logical thoroughfare for such a line. Its width must be increased or the street will continue to experience depression even more pronounced than that from which it now suffers.

By widening Olive street according to the method suggested elsewhere in this report, that is, by special bond issue, the property owners' share to be paid in installments over a period of 20 years, the first installment to fall due five years after the completion of the work, it would undoubtedly prove to be greatly profitable to the owners of the property on Olive street.



**Illustration No. 9.**—Twelfth street has a width of 150 feet from Market street to Washington avenue. A width of 98 feet north of Washington avenue is proposed. The two large buildings shown above will be arcaded.

In the opinion of this Commission, these four projects will work a tremendous change in the traffic situation and in the general business conditions of the community. Their immediate execution will be a real economy. When it is considered that these four projects will greatly simplify the traffic and transit problems, their value would be many times their cost.



**Illustration No. 10.**—An ordinance now pending provides for the extension of Twelfth street south from the viaduct at Chouteau avenue. Much of the usefulness of the new viaduct is impaired because of the present abrupt ending as shown in the illustration.



*BEFORE* HAN transportation there is no factor, with the possible exception of topography, which has a greater influence not only upon the direction of city development, but upon the character of the city from every standpoint. Attractive housing schemes may be planned and their advantages widely advertised; a fine system of parks, beautiful streets, adequate systems for water supply, lighting, and sewerage, beautiful school buildings, libraries and every other social advantage may be provided, but people cannot and will not live there, no matter how beautiful and attractive the scheme, unless they are served with cheap and rapid transportation.

**MILO R. MALTBIE,**

*Member of original Public  
Service Commission (New  
York) and recognized au-  
thority on transportation.*

## TRANSIT

Without adequate transit facilities the rise of a large city is impossible. With improvement in transit service has come greater city expansion. Transit is a determining factor in the city's growth. *The passenger movement expands in greater proportion than a city's area and population.* To continually increase service, to build extensions and to provide terminals is necessary. Until a city well approaches the million population mark, real rapid transit is either unnecessary or prohibitive. Passenger movement must be by street car previous to the installation of rapid transit, and even with a rapid transit system in operation, street car traffic is a most important factor.

Whatever may be the form of transit, it is largely dependent upon the street plan for means of operation, i. e., right-of-way. Transit and the street plan must be considered simultaneously in the preparation of a city plan. When streets are broad and straight and lead directly to outer residential districts, the transit problem is far less difficult than when streets are narrow, irregular and disconnected. Under such circumstances it becomes necessary to either widen, extend or build new streets, or to secure private right-of-way, both expensive proceedings. Proper street planning is a necessary preliminary to good transit.

The extent to which transit governs city expansion is best illustrated by the fact that virtually all occupied portions of a city are within 40 to 60 minutes ride of the city's center, while the majority of people live within a zone which can be reached in 30 minutes, and for a single fare. On the other hand, parts of a city which would normally be within the single fare and half hour time zones and are unprovided with transit, most usually will be unoccupied.

### **Present Transit Facilities**

St. Louis is the largest city in the country with surface transit only. The transit situation in St. Louis has been the subject of much comment. Its governing factors are not always clearly understood. A single corporation now controls all operation, this corporation now having control of properties previously operated by several competing companies. As a result of previous competition, there now exists a system of transportation which leaves much to be desired. Tracks abound in most streets in the business district, and the routing of some lines could greatly be improved. The operating company is not by any means wholly responsible for conditions. Local sentiment and opposition immediately is aroused when rerouting of any particular line is proposed. City officials and the operating company are more or less responsive to public sentiment, so that each is reluctant to initiate changes which would materially improve general service, but encourage local opposition. Furthermore, the tracks and overhead construction represent an appreciable investment which the operating company cannot ignore in contemplating changes.

The city can do much to improve transit service by providing necessary street connections. This is especially true in the approaches to the business district. Unquestionably the operating company would welcome additional approaches. It could use them to advantage. To provide needed right-of-way is the first duty of a city in securing good transit service.

Transit, like any legitimate business, must pay its way. An operating company cannot be expected to give service which is not sufficiently remunerative to warrant the necessary expenditures for construction, depreciation, maintenance and a fair interest on its investment. The real test of a transit system is not only in its ability to give service, but to meet its obligations in so doing.

MAP  
OF  
THE  
CITY OF ST LOUIS  
SHOWING  
DISTRIBUTION OF POPULATION  
AND TRANSIT LINES  
PREPARED BY  
CITY PLAN COMMISSION  
AUG 1916 HAILAND HARTSHORN  
ENGINEER



Plan No. 12.—Population and transit lines are proportionately well distributed. Note, however, the lack of diagonal routes to the business center, the abundance of tracks in the business district and the duplication of many lines caused by earlier competing companies.

The apparent principal transit deficiencies in St. Louis are lack of good street facilities for direct routing, multiplicity of tracks causing certain inefficiency of operation, some poor roadbed, and lack of adequate seating capacity during the evening rush hour, a condition partially attributable to a peculiarly pronounced peak load.

The history of St. Louis transit is as follows:

Year	Passengers	Population
1859	First horse car	
1884	First cable car	
1889	First electric car	
1900	(Strike year) .....	126,813,033..... 575,238
1901	.....	163,905,942
1902	.....	185,077,940
1903	.....	210,238,108
1904	(World's Fair year) .....	285,291,034
1905	.....	244,241,161
1906	.....	291,522,786
1907	.....	313,945,149
1908	.....	310,589,278
1909	.....	320,755,081
1910	.....	335,595,813..... 687,029
1911	.....	348,534,023
1912	.....	357,388,547
1913	.....	376,425,241
1914	.....	373,484,862
1915	.....	356,814,595
		745,988 Est.

The effect on the total number of people using the street cars of the great strike in 1900, the World's Fair in 1904, the financial depression of 1907-1908, and since the outbreak of the European War, is quite noticeable. The total number of passengers is not large for a city the size of St. Louis and the percentage of increase is such as to make questionable at a first glance, the immediate necessity for rapid transit. Renewed business activities, however, should soon produce greater increases in the total number of street car patrons. Un-

usual increases will demand real rapid transit, which should be planned well in advance of its actual need. "Transit which is really rapid will be supplied by railroads placed below or above the surface of the street or on their own rights-of-way."\* To determine actually the route and form of rapid transit which in the future may be needed in St. Louis will necessitate most careful attention.

### Cost of Transit Lines

The expenditures necessary for various forms of transit lines are greater than generally realized. These costs and what they involve are well stated in a paper by John Vipond Davies, "Provision for Future Rapid Transit," in the proceedings of the National Conference on City Planning (1914) as follows:

"The Interborough Rapid Transit Subway in New York, consisting in part of subway and in part of elevated structure, must haul more than 2,000,000 pay passengers per annum per mile of single track to meet fixed charges for structure and equipment. A road which would cost, for structure alone without equipment, say \$500,000 per mile of double track, would have to haul at a five-cent fare 910,000 pay passengers to pay interest charges on its expenditure for that structure, and, if equipment were included, would have to haul probably 1,400,000 pay passengers per annum. It will help materially in this consideration to have clearly stated the approximate relative costs of producing different structures, and the following figures are given as average costs for construction of structures and the installation of structural equipment, but without power or rolling stock. They do not include the value of property for rights of way or easement and are given on the basis of constructing a double track railroad in each case, although reduced to the cost per mile of a single track.

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\*Nelson P. Lewis in a paper "The Automobile and the City Plan," Proceedings Nat. Con. on City Planning, 1916.

## Types of Structure for Double Railway Tracks

	Cost Per Mile of Single Track
Overhead trolley railroad on public roads or private rights of way, where no pavement is required .....	\$ 25,000
Overhead trolley railroad in city streets including asphalt or granite pavement between tracks and two feet outside.....	41,500
Underground trolley railroad in congested city streets, including pavements, conduits and care of subsurface structures under conditions such as those in Washington, D. C.	48,500
Same construction as above under conditions existing in New York City.....	126,500
Elevated railroad, steel structure, such as built by the Public Service Commission in New York City, including stations.....	113,000
Railroad in open cut, excavation by steam shovel, concrete walls, including bridges and stations .....	225,000
Railroad on masonry viaduct, stone ballasted, as on Queen's boulevard, New York City, including stations .....	330,000
Underground railroad near surface, excavation by steam shovel, little or no interference with subsurface structures, including stations . . . . .	402,000
Underground railroad in streets like Broadway, New York, extreme interference with subsurface structures, support of surface tracks with underground trolley construction, including stations .....	1,190,000
Iron tube tunnels, concrete lined, under waterways or below water level, no stations...	2,700,000

The growth of St. Louis has been largely to the north, west and south, the Mississippi River until recently preventing expansion to the east. A recent traffic census on all the large city streets disclosed the percentage of vehicles and street cars from these directions to the business district as follows:

Traffic Entering the Business District

	Vehicles	%	Street Cars	%
From South . . . . .	7,421	19	1,676	18
From West . . . . .	19,578	51	4,260	47
From North . . . . .	11,335	30	3,105	35
	38,334	100	9,041	100

Vehicular and street car traffic in each direction are similar, but the lack of good approaches from the north and south causes much traffic from these portions of the city to enter from the west. The distribution of population and street car traffic is as follows:

Percentages by Districts of Population and Traffic

	Street Car Traffic Entering Business District	Per cent of Total Population
South . . . . .	18	38
West and Central . . . . .	47	32
North . . . . .	35	30
	100	100

Uneven and consequently certain inefficiency of service is apparent. Varying character of districts requires different service, however, and the fact that many residents in the southern part of the city are employed there, thus necessitating less travel to the business district, partly offsets the lack of direct transit service. On the other hand, the need of direct routes is demonstrated.



On the face of present conditions, the prime effort for rapid transit necessarily would be to secure an east and west route, since the bulk of traffic is in this direction. See Plan No. 4.

Some suburban traffic now enters the city on steam roads terminating at the Union Station. Other traffic enters by the McKinley Interurban System at the Twelfth street terminus. The amount of interurban traffic is not large and will not probably be an appreciable factor for some time to come. The traffic entering at Union Station is large, however, and is now obliged to either walk a considerable distance to the business district or pay an extra fare. This suburban business should be removed from the Union Station for the sake of relieving congestion and to secure a terminal nearer the business district. The first step in providing rapid transit for St. Louis would seem to be the creation of a loop or terminal in the business center with suitable opportunity for approach from the north, west and south, and with connection to the Municipal Bridge.

A terminal for rapid transit lines in the business district would not necessarily require that all passenger traffic should there be handled. In fact, terminals often create congestion instead of relieving it. A subsurface loop as a terminus for rapid transit lines leading to the business district would seem to be a logical first step toward rapid transit in St. Louis. A surface loop would be undesirable, since operation would be impeded and few streets in the business district could well be used. An elevated loop structure would perhaps be possible, but difficult to construct in the narrow streets of this district. The noise from an elevated structure is usually the chief objection to it and would be especially objectionable in the business district of St. Louis. A subsurface loop, while most costly to construct, perhaps, would permit the use of streets impossible to use for an elevated

structure, while a good start would already be at hand through use of the present tunnel in Eighth street.

A subsurface loop for rapid transit in the business district could be made to serve the entire district without undue difficulty and would permit of approaches in every direction with allowance for additional use as needed.

The right-of-way for rapid transit lines outside the business district is a problem which will require much attention. Use of the private right-of-way of the Hodiament line west of Vandeventer avenue, has often been suggested and offers some advantage over the use of a street, since it passes through the middle of many blocks rather than in front of the houses. The problem of rapid transit lines is to eliminate grade crossings. The cheapest way to do this is by an elevated structure; the next cheapest by an open cut subsurface line, and the most expensive by subway.

A thorough study of the transit situation will disclose when and where rapid transit lines can best be constructed, while the major street plan will largely determine the actual routes.

*THE promotion of industrial development is a peculiarly pressing problem in St. Louis.*

*In this day of keen competition among cities for new industries, mere availability of sites is insufficient. Additional inducements in the way of service and low rates for switching, for water, power and other necessities are important.*

## **TRANSPORTATION**

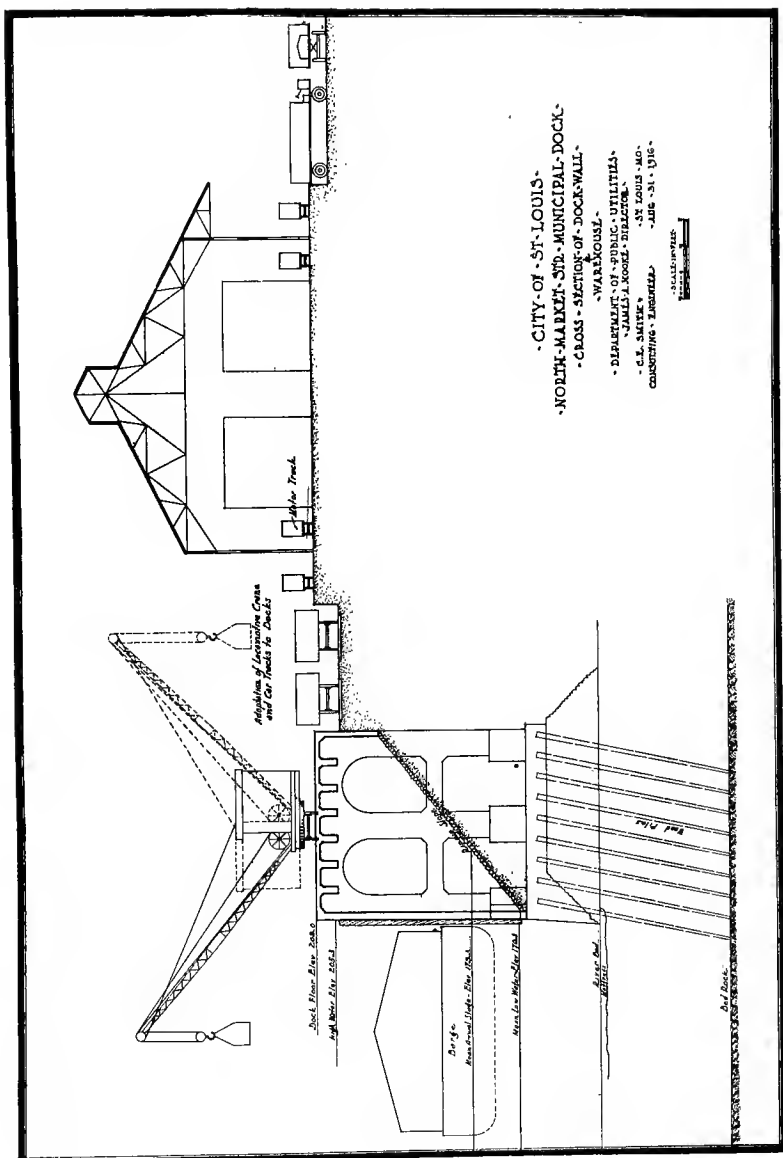
### **St. Louis a Natural Location for Industries**

By reason of its naturally advantageous location at the center of the country with a population of 30,000,000 within a radius of 500 miles, proximity to the great cattle and corn growing region, and the fertile Southwest, with a network of 26 railroads extending to every part of the continent, St. Louis offers fully as advantageous a location to the average industry as any other city. A large local labor market makes possible a plenteous supply of skilled and unskilled labor for all classes of work. Ample and desirable living quarters for all classes with living costs below the average are added reasons why prospective industrial concerns will find it greatly to their advantage to locate in St. Louis. St. Louis is the greatest fur and wool market in the world, the center of the shoe industry, a leader in the dry goods business and hardware trade and an important market for brick and vitrified pipe made from large local clay deposits. An exceedingly large pig iron plant and a cotton mill have recently been constructed, marking the first step in the further development of those industries.

Possessed of such favorable conditions, St. Louis can scarcely fail to become a leader among cities, as it rightfully should, provided proper attention is given to internal facilities. The present low tax rate and low assessed valuation of property, plenteous supply of good water, coal, gas and electricity, all at reasonable cost, are necessary and fortunate adjuncts. To maintain such favorable conditions and to supplement them with available industrial sites having good railroad service and low switching charges is to provide a maximum of desirability.

### **Development of Railroad Facilities**

Keen railroad competition is conducive to good service and lower rates. But private competition does not assure the maximum development of natural industrial areas. Funds for extensions are not available when competition is greatest. In 1889, the Terminal Railroad Association was formed, and now comprises 15 of the roads operating in St. Louis, as a means of circumventing destructive competition and providing better service. As a result of the formation of the Terminal Association, service has been increased and considerable new territory opened up for industrial use. The Association now owns and operates 294 miles of track in the city limits. In addition to lines in the Mill Creek Valley and along the river front, an industrial branch has been built through the northern part of the city and extending well out into the county, a right-of-way having been acquired which will connect with the Frisco Railroad at the city limits in the extreme southwest. With the construction of this latter connection, a belt line will result, including a small part of St. Louis County and all of central and northern St. Louis. A railroad extending southeast through the River des Peres Valley from the junction of the Frisco and Terminal Association tracks to the Mississippi River, and thence north either on the present tracks of the Iron Mountain or on a separate track along the levee to the Mill Creek Valley, would seem a most logical step in the advancement of railroad facilities in St. Louis. It would then be possible to open a still greater area of good industrial territory and afford opportunity for routing about the city much through traffic which comes into the heart of the city in the Mill Creek Valley where great congestion now exists. Recent activity on the part of some roads would indicate that a shift of some through freight via the north branch of the Terminal is now contemplated.



**Plan No. 13.**—The first municipal dock is now being built at North Market street. Others will be constructed at various points along the river front as conditions warrant.

### **The City's Share**

To insure a maximum of service and to prohibit excessive transfer charges, some cities have themselves undertaken railroad construction and operation. New Orleans suffered for years from meager service and exorbitant switching charges. A publicly owned and operated railroad, six miles in length, has reduced switching charges many times over, affords good service to all lines and has resulted in the development of several miles of river front into modern terminals, sheds and warehouses. To reduce the so-called "arbitrary" charge of 20 cents per ton for all coal carried to St. Louis from the opposite side of the Mississippi River, the city has expended \$7,000,000 in the building of a new Municipal Bridge over which coal may come at practically no additional cost. The mere presence of the Municipal Bridge without complete switch connections to all roads and without adequate connecting lines and yard facilities, will by no means insure a maximum benefit from railroad service in St. Louis. Unquestionably the city should own and operate or lease such connecting lines as will insure, so far as possible, a maximum of service without excessive cost, to industries dependent on railroads.

### **A Municipal Railroad System**

Expiring franchises will shortly give to the city a railroad line extending from the Chain of Rocks to Arsenal street or along 14 of the city's 19 miles of water front. From the Municipal Bridge a line will also be built to Twenty-third street. *A connection between the city's levee track and the Municipal Bridge should be effected at once.* An extension of the levee track to the River des Peres and from thence to the junction of the Frisco and the Terminal Railroad through the River des Peres Valley, should be undertaken when warranted.

With such a complete system of railroad tracks it would be possible to open up vast areas to better industrial use and to afford new locations for terminal yards and freight houses. The present congestion of freight in the Mill Creek Valley is not conducive to growth.

Changes in the harbor line have been made and others are contemplated which will permit filling in numerous places on the St. Louis side of the Mississippi River, provided the area of cross section of the river is not reduced, thus reducing the flow of the river. Additional industrial or warehouse facilities can here be provided and more railroad yards created—an urgent necessity.

### **Water Transportation**

Freight movement by water is slower but much cheaper than by rail. For all except perishable commodities water transportation is often as desirable as rail transportation. Before the development of railroads St. Louis and other cities along the Mississippi River did a great proportion of their shipping on the river by flat boats. The rapid expansion of railroad lines and the competition offered to water transport resulted in the decline of river traffic until at one time it became dangerously near a negligible factor.

With the opening of the Panama Canal, however, a new era in water transportation has begun. On non-perishable freight, which is by far the greater portion, the factor of cost is to be considered as much as the factor of time. Water transportation will become of ever increasing importance because of the cheaper rates provided. The Panama Canal has made possible a water rate between points on the Atlantic and Pacific coasts which is lower than the rail rate from St. Louis to either coast. Obviously it is necessary for the Mississippi Valley to develop water routes which will permit it to compete in other than local markets.



### **Things to be Overcome in Developing River Traffic**

A chief obstacle to the use of the Mississippi for freight traffic has been its lack of depth and constantly changing channels. The maximum depth of 7 feet at low water between St. Louis and New Orleans necessitates a carrier of shallow draft, which is not seaworthy, and requires a change of cargo at New Orleans. The difficulty of handling freight quickly and economically in river cities is a further obstacle, since the variation in height of the river necessitates the construction of levees for protection against floods, up which freight is ordinarily transferred by hand. Much attention has recently been given to the problems of river transportation with the result that the following have been suggested as necessary:

1. Adoption of a craft capable of navigating the river and carrying large cargoes.
2. Construction of unit terminals in all cities where the usual type of craft can be loaded and unloaded quickly and economically.

### **Municipal Terminals**

The City Plan Commission presented to the Municipal Assembly on April 7, 1913, and on March 1, 1915, the plans and recommendations of its Consulting Engineer, Baxter L. Brown, for unit terminals at several places along the river front. The work of the Commission, and particularly of its engineer, was the first thorough-going effort to analyze the river transportation problem. It was the pioneer step in a movement which will assume ever-increasing proportions. With respect to local conditions it was extremely valuable and beneficial. The locations were chosen after a careful study of available sites and were placed largely on property now owned by the city, approximately 6 of the 19 miles

of river front being city property. Since the activities of the City Plan Commission in favor of river terminals the city has adopted definite plans for such terminals with suggested tentative locations as follows:

1. Chain of Rocks
2. Foot of East Grand avenue
3. " " North Market street
4. " " Valentine street
5. " " Victor street
6. " " Osceola street

An initial appropriation of \$285,000 for the construction of river terminals has been made. A temporary municipal dock has been established at the foot of O'Fallon street where the first of a new type of river boat is making regular sailings to New Orleans. A contract has recently been let for the construction of the first permanent municipal dock at North Market street.

A thorough report on "Proposed Municipal River Terminal System" has recently been prepared by S. W. Bowen, Chief Designing Engineer of the Department of Public Utilities, which report well summarizes conditions contingent to initiating successful river transportation as follows:

- 1st. "That it is not advisable, at least under present conditions, to attempt to place this project on a strictly business basis at the start; that is, to make the revenue carry the sinking fund and interest in addition to the other expenses, for the reason that the resulting rates will be too high to attract business."
- 2nd. "That if at the start a portion of the sinking fund and the interest are carried by the city, the rates may be made sufficiently low to be attractive and will, eventually, afford sufficient revenue to cover all expenses."

- 3rd. "That ample tonnage exists to support such an undertaking on the lines mentioned above but a strong effort is needed to attract it to the river."
- 4th. "That river transportation may be made profitable if proper transportation and terminal facilities are provided."
- 5th. "That on account of the longer time required for river transportation, in general, principally so-called slow freight may be expected to go by river."
- 6th. "That there is sufficient channel depth to accommodate vessels of medium draft, and that the type of vessel should be governed by the existing conditions."

Mr. Bowen recommends:

- 1st. "That four units, of 1,200 lineal feet, of docks, with the necessary warehouses and other adjuncts, be built at Valentine street and at North Market street; and that these docks be equipped with the necessary mechanical equipment for freight handling, as outlined above. This machinery, so far as possible, to be operated by electricity."
- 2nd. "That the present municipal line be connected with the tracks of the St. Louis Transfer Railway Company \* \* \* and that the necessary tracks and yards be constructed at each dock site, connecting with the tracks of the St. Louis Transfer Railway Company."
- 3rd. "That a double track elevated connection be constructed between the tracks on the wharf and those in the Mill Creek Valley, as indicated on the maps, and that the Mill Creek Valley tracks be re-arranged as much as is necessary to connect them with the Municipal Bridge and with the wharf connection."

- 4th. "That in connection with this work, to provide for future development, the harbor lines be shifted \* \* \* and that, at some future time when more space is needed, the necessary reclamation work be done along these new lines and at the work house. The cost of this particular work is not to be included in the amount mentioned below, but is to be taken care of out of municipal revenue."
- 5th. "That bonds to the amount of \$2,000,000.00 be issued to cover the cost of the above work, with the exception noted above."
- 6th. "That the money taken from municipal revenue to build and equip North Market Street Dock—First Section, be refunded out of this bond issue."

### Conclusion

Industrial prosperity is vital to the welfare of a great city. The successful development of all industrial property and the maximum of service cannot be provided by private enterprises. The city should aid its own industries by facilitating the handling of freight to all avenues of transportation and by reducing switching charges to a minimum. This is impossible where the railroads and terminals are planned wholly for the advancement of private interests. St. Louis should provide rail connections between all large industrial areas, the Municipal Bridge and all large railroads entering the city, with suitable yards and terminals. St. Louis should also encourage the advancement of river traffic by construction of terminals, properly equipped, and with connections between all railroads and the city's system of connecting railroad lines.

*“THE larger a city grows the more essential a comprehensive city plan becomes. Traffic problems, the congestion of population, the necessity for an intensive use of land, the magnitude of the property values affected, make the control of building development more and more essential to the health, comfort and welfare of the city and its inhabitants.*

*“Every city becomes divided into more or less clearly defined districts of different occupation, use and type of building construction. Strong social and economic forces work toward a natural segregation of buildings according to type and use. In general, the maximum land values and the maximum rentals are obtained where this segregation and uniformity are most complete. One purpose of districting regulations is to strengthen and supplement the natural trend toward segregation.*

*“In spite of the natural trend toward segregation, building development in many parts of the city is haphazard. The natural trend toward segregation and uniformity is not strong enough to prevent the sporadic invasion of a district by harmful or inappropriate buildings or uses. The districting plan will do for the individual owners what they cannot do for themselves—set up uniform restrictions that will protect each against his neighbor and thus be of benefit to all.”—Report of New York Building Districts Commission.*

## DISTRICTING

Of all the land or property in a large city, that used for streets, parks and other recreational purposes, hospitals, schools, public buildings, and for other public purposes, comprises usually from 25 to 40 per cent. In St. Louis the estimated use of land is as follows:

Streets (940 miles) .....	6,836	acres	17.4%
Parks, playgrounds and bath-houses.	2,776.36	"	7.1 "
Public buildings .....	538.47	"	1.4 "
Schools .....	153.2	"	.1 "
<hr/>			
Total .....	10,304.03	acres	26.0%
<hr/>			
Private purposes (estimate) .....	28,972.77	"	74.0%
<hr/>			
Total area of City .....	39,276.8	acres	100.0%
	61.37	Sq. Mi.	

### Purposes of Districting

All city planning endeavor has been directed toward the use of public property only, largely leaving the remaining 60 to 70 per cent of property to be developed at the discretion of private individuals or corporations. These private owners have had almost no common interest in the development of property which would approach uniformity. It is common knowledge that all cities consequently present little more than a slight resemblance of unity with a considerable degree of chaos. This haphazard method of city building has resulted in a train of evils which municipal officials and workers have successfully explained, but unsuccessfully attempted to contend with. Land speculation has abounded and materially assisted to augment existing evils. The character of whole neighborhoods has changed, the values in them constantly diminished and the onward march of progress has caused them to be passed over, while land further and further from the city's center has been

brought into the market. The problem is one of plain economics, for not only is it necessary sooner or later to contend with the areas which have depreciated in value and in use, but also the expense of providing transit, water, gas and other public utilities for great distances becomes prohibitive.

In some cities also the reverse problem of concentration, of over intensive use of land, arises. This leads to the question, not so much of economics, although this is also an appreciable factor, but rather of health. Light and air are necessary to sustain life and these ordinarily cannot be had when buildings go too far into the air rather than spreading over a certain area.

Obviously there is a reasonable limit not only to the area of land for development in any city, but to the extent to which that land may be used.

Private land development is responsible for each problem. Unquestionably the interests of the whole community require a form of control over the development of the entire city, which shall enable all to enjoy the benefits of urban life without prohibitive expense and without unwarranted detrimental health conditions. Such control, to be effective, must be public. Without it, financial strangulation and impossible health conditions are invited. American cities have enjoyed a degree of growth unprecedented in the history of the world. Problems above cited are a direct result of that growth, and are principally a result of less guidance than in all other countries. American cities, and the majority of property holders in them, have but recently come to realize the absolute necessity of intelligent centralized control of city growth. Districting is the name given to the first attempt at such control.

Districting is not wholly a new practice. It involves the establishment of restrictions governing the height, the occupancy and the area of ground to be covered by

all buildings. Already most cities control the height of buildings in a more or less perfunctory manner. All cities control the area of ground to be covered by buildings, particularly tenements, through building codes and tenement house laws. Only in a few cities has an attempt been made to control the occupancy of buildings.

### **Districting in Other Cities**

New York City was among the first to rigidly enforce certain stringent height and area restrictions as a result of a most aggravating tenement problem. Partly as a result of this and partly as a result of peculiarly grave economic conditions in certain districts, it has just completed the first thorough analysis of conditions governing city expansion yet undertaken in any American city. As a result of this work a complete districting plan has been devised and is now in force. The work of the New York Building Districts Commission and of the New York Heights of Buildings Commission, is monumental in character for its thoroughness of detail and technique. It will prove to be of unending value to other cities.

Restrictions in New York are of three kinds—height, area and occupancy of buildings. The height restrictions are established by districts and are based entirely on street widths, a maximum of  $2\frac{1}{2}$  times the street width being permitted in the most important business districts; 1 times the street width only being permitted in the residence districts. Area restrictions are imposed by districts. 90 per cent of a lot can be used in the business districts, this being the maximum; 30 per cent of a lot only can be built on in first class residential districts. Occupancy restrictions are based on present and probable future requirements, residence, commercial and industrial areas being segregated. The restrictions apply to future construction only. They have met with pop-



ular favor, since there is little hardship involved and great advantage to be gained. Changes can be made on petition with consent of the Board of Estimate and Apportionment.

Most cities fix an arbitrary height limit to which all buildings must conform. A few cities have attempted to fix height limits according to districts or special conditions. Boston, Baltimore, Washington and Indianapolis furnish the best examples of such practice, aside from New York. Boston restricts the height of buildings in the business district to 125 feet and in the residence district to 80 feet, with certain intermediate exceptions. Baltimore and Indianapolis each have a maximum height limit for the city and a special height limit within the vicinity of the Washington Monument in Baltimore and the Sailors' Monument in Indianapolis. With certain exceptions, the height of buildings in Washington is limited to 130 feet, all streets being designated as "business" or "residence," a limit of 85 feet being possible on the latter and 1 times the street width plus 20 feet, on the former.

The area which buildings may cover is usually restricted in all cities according to the character of the structure, the restrictions usually being found in the building code or tenement laws.

The establishment of residential and industrial districts is permitted in second class cities of New York State, in all cities in Massachusetts, in the cities of Duluth, Minneapolis and St. Paul, in cities of over 25,000 population in Wisconsin, in Baltimore, in Seattle and in Los Angeles.

### **A Districting Plan for St. Louis**

The problem in St. Louis is peculiarly distinctive and peculiarly local. While much of value in fundamentals can be had from the work in other cities, the specific character of eventual districting plans can be determined only by exhaustive local studies.

The districting work already accomplished in St. Louis and elsewhere, i. e., building height and area restrictions, is considered to be a valid exercise of the police power in the interests of the safety, health and general welfare of the community. More stringent restrictions of such a character and also certain additional occupancy restrictions are desirable. A proper districting plan would not ignore existing conditions nor would it be oblivious of future requirements. Prescribed height, use and area restrictions would be governed by existing conditions, and where intensity of development is greatest, the restrictions would be less stringent than in sections where little or no development has taken place, thus insuring more desirable conditions in the interest of the general welfare and incidentally insuring a greater degree of uniformity.

### **Constitutionality of Districting**

The constitutionality of districting is often questioned by those to whom the subject is new. The following extract from the New York Heights of Buildings Commission Report is of interest in this respect:

“While the desirability of districting is generally recognized by all students of this subject, there is a fear on the part of some that it may be held void as an infringement of the constitutional guarantee of equality. The constitutional guarantee of equal protection of the law constitutes one of the most important limitations upon the police power. It means that the government shall not impose particular burdens upon individuals or corporations to meet dangers for which they cannot in justice be held responsible, and that all legislative discriminations or classifications shall be justified by differences of status, act or occupation correspond-

ing to the difference of legislative measures.<sup>1</sup> The idea of equality excludes in principle both particular burdens and special privileges, but admits of reasonable classification.<sup>2</sup>

“The question what constitutes reasonable classification comes up chiefly in connection with districting. To what length is it permissible to go in the division of the city into districts with varying regulations as to the height, size and arrangements of buildings? Other forms of classification have received quite general acceptance. Thus tenement houses have often been put in a separate class and subjected to more stringent regulations. This has been justified on the ground of greater importance in relation to public health or safety. Likewise, height regulations have been adopted varying according to the width of the street. This is in effect a districting plan. The district changes with each variation in street width. This sort of districting is usual and approved. It may be justified directly on the ground of health and safety. A general plan of districting such as seems needful cannot be justified solely on such grounds. We cannot justify more stringent regulations for dwelling in the suburbs than in lower Manhattan. It seems, however, that such districting can be justified if it can be shown to be essential to the general welfare. If regulations admittedly appropriate and reasonable for suburban areas are admittedly inappropriate and unreasonable for congested areas, the public importance and necessity for districting are clearly shown.

“Classification or districting for the purposes of regulation must either be based directly on the purposes for which the police power may be exercised or it must be justified by difference in injury to vested interests. In order to justify more stringent regulations for dwell-

<sup>1</sup> Freund, Police Power, page 5.

<sup>2</sup> Freund, Police Power, section 611.

ling-houses in the suburbs than for dwelling-houses in lower Manhattan it must appear either that such regulations for the suburbs are more important to the public health, safety or general welfare than for lower Manhattan, or that while equally important for one or more of these purposes in both districts the suburban regulations would if applied to lower Manhattan interfere so seriously with existing property values as to render them of doubtful expediency or constitutionality. The courts will insist that there be some fair relation between the public good to be secured by the regulation and the private injury suffered. Building regulations must be reasonable in order to be constitutional. There is no absolute standard for all conditions. There must be a reasonable relation between the public object to be gained and the loss of property and liberty suffered. It is clear that any deprivation of individual liberty is a real public loss that must be justified by some greater public gain. It is also clear that extended injury to property interests may cause widespread public loss and consequently should have for its justification as an exercise of the police power some greater public gain. In order to be reasonable there must be a proportionateness of means to ends. This point is dwelt upon at length by Freund in his treatise on the Police Power. He says (Sec. 63):

“ ‘Leading courts have stated very distinctly that reasonableness is one of the inherent limitations of the police power; so the Supreme Court of Massachusetts:<sup>1</sup> “Difference of degree is one of the distinctions by which the right of the legislature to exercise the police power must be determined. Some small limitations of previously existing rights incident to property may be imposed for the sake of preventing a manifest evil. Larger ones could not be without the exercise of the right of

<sup>1</sup> Rideout v. Knox, 148 Mass. 368.

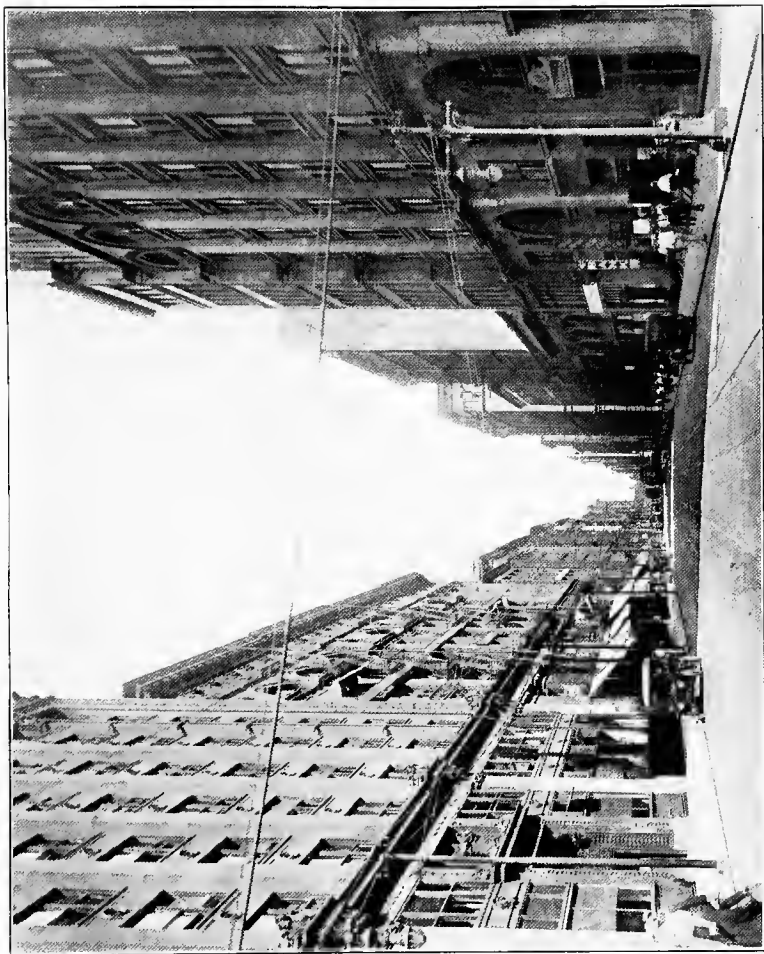
eminent domain.” And the Supreme Court of the U. S.:<sup>2</sup> “A statute of a regulation provided for therein, is frequently valid or the reverse, according as the fact may be, whether it is a reasonable or an unreasonable exercise of legislative power over the subject matter involved, and in many cases questions of degree are the controlling ones by which to determine the validity, or the reverse, of legislative action.” And in *Plessy v. Ferguson*,<sup>3</sup> in answer to the contention that the principle of separation might be carried to the length of assigning to black and white different quarters of the city for living, or different sides of the street for walking, the Supreme Court said: “The reply to all this is, that every exercise of the police power must be reasonable.” \* \* \* There are few forms of control that cannot become unreasonable by an excess of degree and there are many cases where no other principle of limitation is discoverable than that of reasonableness.’

“The districting of a city for building restriction purposes is made necessary by the fundamental characteristic of ‘reasonableness’ which is the essential feature of a valid exercise of the police power. Especially in a great city like New York it becomes necessary that building regulations should vary according to the character of the district and according to the type and use of the building. In certain districts suburban conditions of light and air can be maintained with great public advantage and with slight private loss; in other districts such favorable conditions of light and air, while theoretically just as desirable, are entirely impracticable, and any law that attempted to enforce them would be clearly unreasonable and void.

“A classification based on proportionateness of means to ends is recognized in practically all building regulations. General maximum height regulations, for example, apply only to buildings hereafter constructed.

<sup>2</sup> *Wisconsin M. & P. R. Co. v. Jacobson*, 179 U. S. 287. (1906.)

<sup>3</sup> 163 U. S. 537.



**Illustration No. 11.**—Washington avenue is one of the few streets in St. Louis that has experienced anything like a uniformity of development. The city's principal retail center is on Washington avenue, east of Eighth street, while the principal wholesale district is also on Washington avenue between Eighth and Eighteenth streets.

In doing so they discriminate in favor of the owners of buildings already constructed. A lopping off of existing buildings in excess of the prescribed height is of no less importance to the health, safety and convenience of the public than the restriction of the height of an equal number of buildings hereafter to be erected. A discrimination in favor of buildings already constructed cannot be justified directly on the grounds for which the police power may be exercised. Such discrimination or classification finds abundant justification, however, when we apply the controlling principle of reasonableness and proportionateness of means to ends. The reconstruction of existing buildings would impose burdens on private owners disproportionate to the public gain. Such regulations would therefore be reasonable and valid. It seems that classification or exemption essential to the reasonableness of a regulation is itself reasonable. This principle constitutes an adequate justification for districting.

“While a specific regulation taken by itself may not seem to have a very direct relation to the purposes for which the police power may be invoked, yet when taken as a part of a comprehensive plan for the control of building development throughout the entire city, its relation to such purposes may be unmistakable. Grant that a comprehensive system of districting is essential to the health and general welfare of the city, and it follows that every specific regulation that is an essential part of such comprehensive system is justified under the police power.”

### **The Necessity for Districting in St. Louis**

In the interests of general welfare, the districting plan should encourage a greater uniformity in the extent of occupied area and greater uniformity in the degree of its use. It should tend to discourage speculation in land, which has resulted in most of the problems which

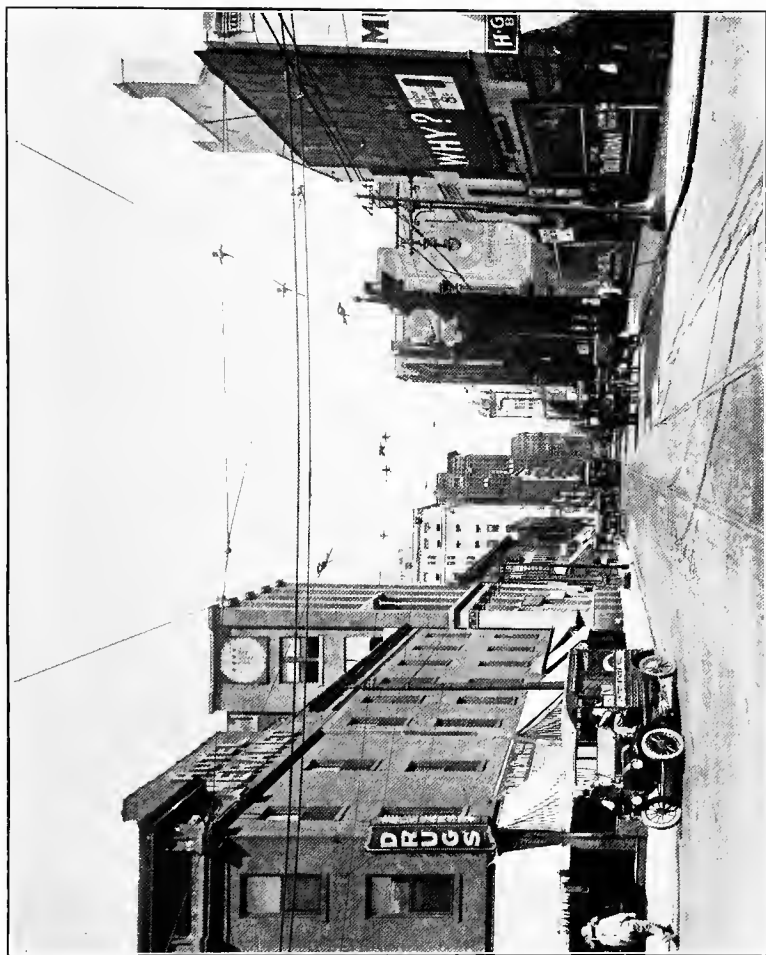


Illustration No. 12.—Pine street, east of Twelfth, is illustrative of the miscellaneous character of so many streets in St. Louis, particularly in the business district. Buildings 18 stories high are flanked by vacant lots, while two and three-story structures predominate.



districting seeks to solve. Districting also would prevent intermingling of residences and stores and factories, a condition detrimental not only to the health and safety but the economic welfare of any community. Districting seeks merely to impose restrictions upon all the land of the city and by so doing, supplement restrictions which are frequently found to be ineffectual, imposed in certain deeds of sale in certain residential developments, which restrictions often expire within a limited period of time and are seldom, if ever, removed after expiration.

A proper districting plan will materially help to solve the housing problem of St. Louis more specifically stated in another chapter. Districting also will prevent undue congestion, a problem not yet unusually great in St. Louis. These are interests affecting the public health and safety.

In St. Louis there are two districts commonly known as blighted districts, where numerous buildings are vacant and where the values of buildings have in some cases wholly disappeared, while the value of land has greatly depreciated. Unquestionably the existence of a districting plan would largely have prevented the development of such unwarranted conditions. Districts such as these exist in every city and are not common to St. Louis alone. The fact that each of the two local districts is so situated as to daily attract the notice of all who enter the city by rail or boat, and of those passing to and from the business district, places undue attention upon them. While a proper districting plan will not wholly or even largely rejuvenate these districts, it will be the first step toward such rejuvenation. Without it, it is questionable how far the owners, upon whom rest the responsibility and the effort necessary to rehabilitate these districts, can go in the work of rejuvenation.

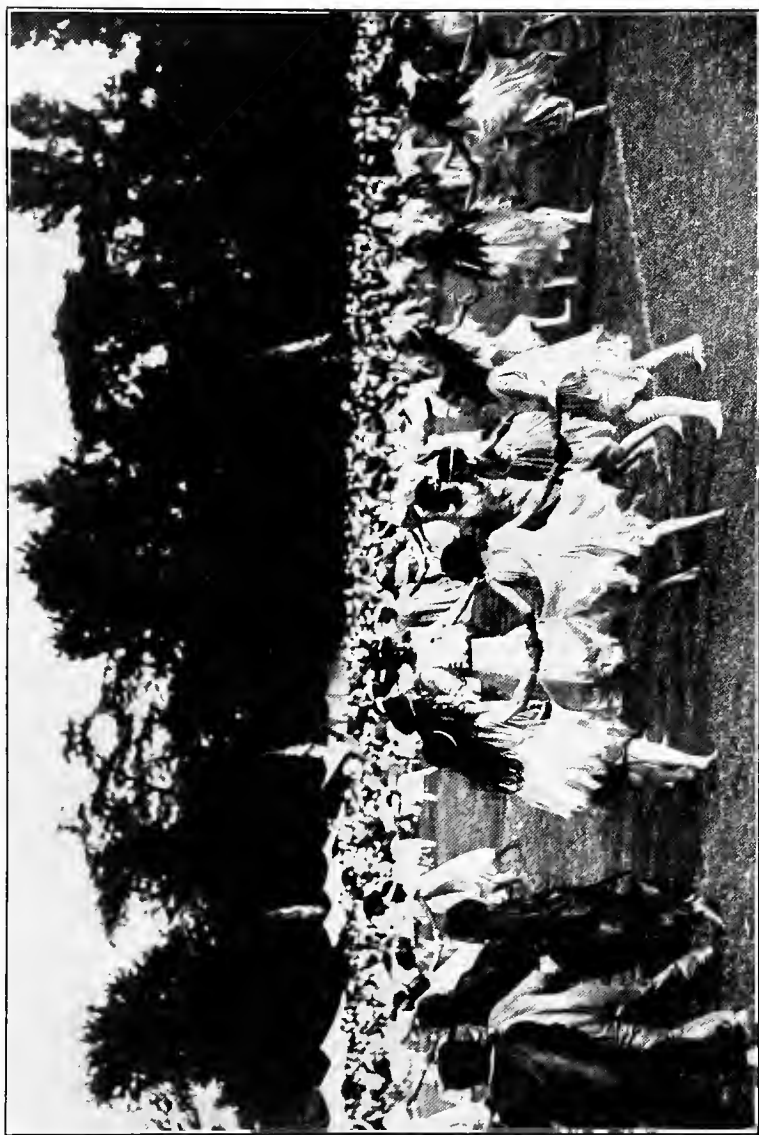


Illustration No. 13.—A scene on Municipal Play Day, when all St. Louis turns out to enjoy its public parks.

**G***REAT cities have great social problems. Where homes are small, close together and often overcrowded, land is expensive and many persons share a single yard. The necessary relaxation from the daily task cannot be found in the home. This is why cities are spending large sums for parks, playgrounds, recreation centers, baths, and the like. These are necessities, not luxuries.*

•

## RECREATION

Public recreation has come to be recognized as a constructive measure in the conservation of human health. Public recreation includes the construction, maintenance and administration of parks, playgrounds, recreation centers, bath houses and such other facilities as afford opportunity to people to secure rest, amusement and relaxation from their daily labor, which otherwise they would be unable to enjoy. Usually the park department or a recreation department is in charge of the major proportion of the work of providing necessary facilities, though the co-operation of the library and public school system is needed. Private agencies, such as churches, clubs and societies, also promote recreational advantages.

A complete recreation system would be one which afforded at all times and for all kinds and conditions of people, for children and adults, an opportunity for such relaxation or amusement as might be needed. Obviously such a system would be prohibitive in cost and unwarranted. The function of a city is to provide service, recreational or otherwise, only within the limitations of reason and economy. To provide recreation in accordance with the distribution of the population and the demand for same, obviously should be the purpose of any well organized effort. There is need of systematic location and extension of service. Different conditions and ages of people require different forms of service. A small park cannot well offer the full opportunity for use that a large park can, but the small park can be adapted to more intensive use. Small parks, playgrounds and recreation centers are needed for intensive use in densely populated districts. In districts where homes are of ample size and on large lots, there is much less need for

playgrounds or recreation centers. The large parks meet fully the recreational demands of such districts.

### **Forms of Recreational Facilities**

For purposes of general consideration, recreational facilities may be grouped as follows:

- A. Public Reservations
- B. Large Parks
- C. Neighborhood Parks
- D. Small Parks and Playgrounds
- E. Special facilities, such as bath houses, wading or bathing pools, athletic fields, etc.

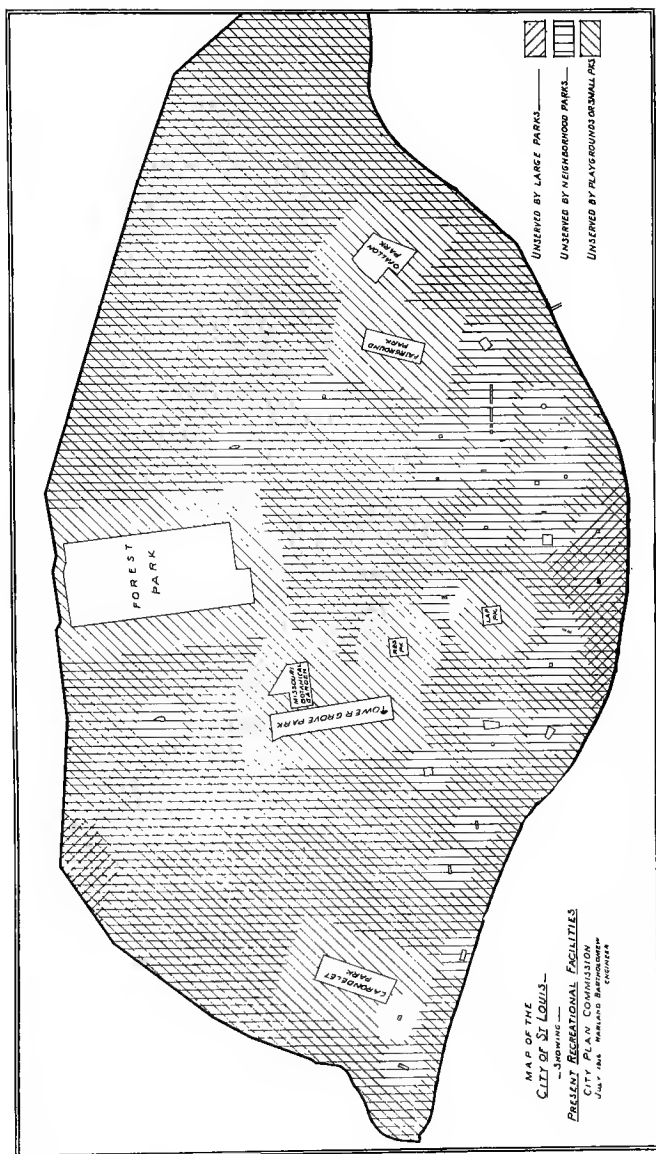
In defining the various types of parks, it is to be remembered that not always do distinctive types occur. For reasons of economy or expediency, two or more types may be combined. The present purposes of definition are simply to clearly differentiate types and uses.

### **Public Reservations**

Public reservations are usually nothing more than large areas suited for park purposes located well beyond the city limits, comprising several hundred acres, maintained largely in their original state, secured at low cost and serving merely as outing places for persons making a day's or week's excursion. The advantage of securing suitable park land when its value is low and gradually and economically developing it for a more intensive use as the city grows toward it, is unquestionable.

### **Large Parks**

Large parks of approximately 60 or more acres, within the city limits, are usually well developed, carefully designed, equipped with boating facilities, good



**Plan No. 14.—St. Louis has several well-used large parks. It needs more neighborhood parks and playgrounds, and these should be secured in advance of population, so far as possible.**

roads and pleasant walks and drives, athletic fields, tennis courts, golf links, picnic grounds, flower gardens, statuary, pavilion, band stand, etc. The average large park, when easily accessible, has an effective radius of possibly three miles. People living within three miles of a large park can usually reach it within a reasonably short time, and for a single fare. The number of large parks needed depends entirely upon the size of the city and existing conditions.

### **Neighborhood Parks**

Parks of size from 10 to 50 acres may be considered as neighborhood parks inasmuch as they are too small to be considered in the large park group, or have all the facilities of large parks. Their use must necessarily be confined to nearby residents. This type of park may be in a city's business section, thus permitting brief use at the noon hour and affording opportunity for rest to passers-by. Or the neighborhood park may be located in industrial or residential districts, giving opportunity for mothers with children to spend brief hours of leisure during the day and for whole families at evening, amidst surroundings which are pleasant and healthful. Neighborhood parks should be of service to people living within one-half mile, or comfortable walking distance.

### **Small Parks and Playgrounds**

Small parks and playgrounds are most needed in congested districts and when properly designed contain sufficient play room and apparatus to interest and attract children of all ages. There is usually an instructor or director in charge to conduct and lead the various activities and to teach games and useful simple activities such as sewing for girls, and handicraft for boys, story-telling, etc. The effective radius of a playground



Illustration No. 14.—The large parks of St. Louis offer many charming views. Here is a small garden in O'Tallon Park with the Mississippi in the background.



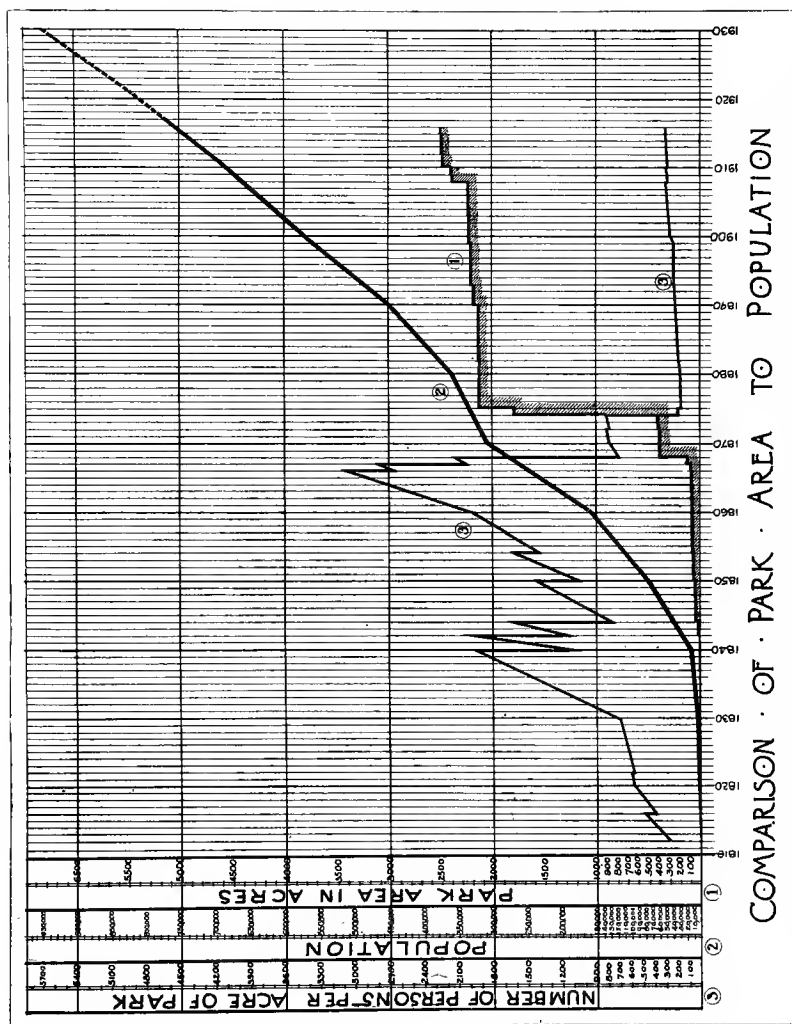
is small, seldom more than one-fourth mile or even less if wide or busy streets or business intervenes. Playgrounds may be of excellent educational value and are often conducted in connection with the school system.

### **Special Recreational Facilities**

The special recreational features which a city may provide, such as bathing pools, bath houses, library, recreation centers, etc., are sometimes located within the parks and playgrounds above mentioned, or wholly apart from them as occasion may require. Their use and effectiveness varies according to local conditions. A most effective and successful form of providing amusement, recreation and educational instruction is by the community center, sometimes a school, sometimes a special building, with library, reading rooms, gymnasium, pool, auditorium, bowling alleys and similar equipment. In such buildings a large group of adults can be reached and encouraged to make beneficial use of leisure time. Community musical associations, debating clubs, language study and social intercourse all encourage a better type of citizen, especially in the city's foreign quarters. The branch library buildings of St. Louis are being used most successfully as community centers. There are also well-established community centers in nine public school buildings.

### **Complications of the Recreation Problem**

The diversity of forms of recreational service, the varying demands for same according to intensity of development, the necessity for providing separate facilities for colored people and the failure of certain races to mingle harmoniously, all tend to complicate the problem of supply. Yet the distinction in forms of service, the need for comprehensive handling of what must essen-



Plan No. 15.—Increase in park area (line 1) has not kept pace with increase in population (line 2) for new park areas have been acquired out of the city's current revenue. While there is yet opportunity St. Louis should acquire more small parks and playgrounds in the city, and reservations outside the city, through a substantial bond issue.

tially be a system, makes careful study and analysis of the work most important. The proved relation of juvenile crime to lack of proper occupation during leisure hours follows on up the scale. Where the spare time of the growing child and the adult is spent, largely determines the future relation of that person to the community. With normal opportunities, useful citizenship is encouraged; absolute lack of opportunity leads to a search for diversion which perhaps may not be found in the best of environment. Future good citizens are not fostered in environment which may be detrimental to good morals.

### Recreation in St. Louis

St. Louis is a city of homes. The percentage of home owners here is unusually great, a most healthful condition. Yet, certain housing evils and a varying intensity of use of land, make necessary certain recreational facilities. Exclusive of the large attendance at public parks, the number of people attending parks and playgrounds in 1915 was as follows:

#### Public Recreation Attendance

Year Ending April 1, 1915.

18	Playgrounds . . . . .	2,481,078
3	Bath Houses . . . . .	1,076,863
2	Bathing Pools . . . . .	386,166
	Moving Pictures . . . . .	304,000
145	Band Concerts . . . . .	570,950
	Game Field (including spectators); Base- ball, Football, Golf, Tennis . . . . .	619,150
		<hr/> 5,438,207

Additional public recreational facilities in St. Louis are:

Art Museum  
Main Library  
Six Branch Libraries  
Missouri Botanical Garden  
Gymnasium Classes in High Schools

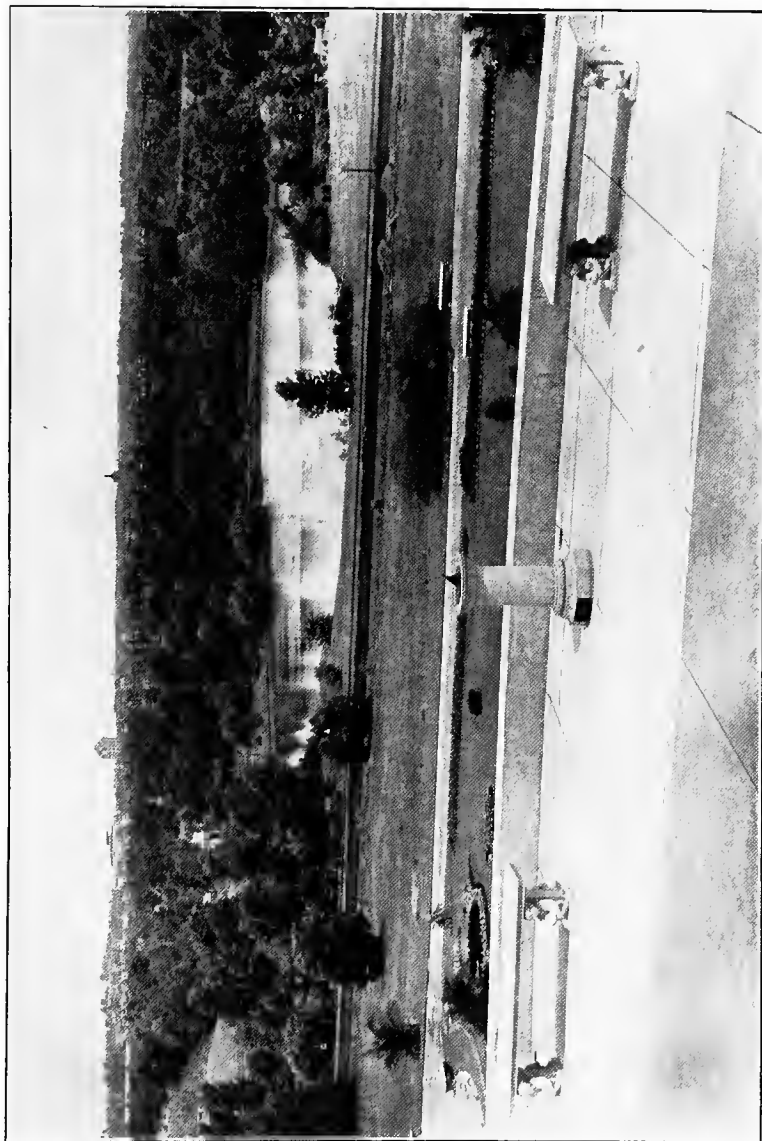


Illustration No. 15.—Forest Park is in every sense the recreation ground of a great city. Its 1380 acres afford opportunity for all forms of out-door games, extensive views of formal and informal park land, walks and drives, and contains picnic grounds, art museum, historical museum, zoo, open air theater and concert grove.

Public Bath No. 4, equipped with pool, showers and gymnasium, and the Kennerly Ave. Civic Center, soon to be completed, containing high school, public school, branch library and extensive playground, are for the exclusive use of negroes.

Few cities surpass St. Louis in the extent to which recreational service has been developed and also in the extent of attendance; but no claim is made that present service is adequate. St. Louis has no large public reservations. Chain of Rocks and Jefferson Barracks are the nearest approach to reservations but are of insufficient size. Their need is evident and their early acquisition would be a means of much future economy.

In Forest Park, Carondelet Park, Tower Grove Park, Fairground, O'Fallon Park, and Penrose Park (soon to be constructed), St. Louis has a better supply of large parks than most large cities.

For neighborhood parks, St. Louis now has Lafayette Park, Gravois Park, Hyde Park, Lyon Park, Compton Hill Reservoir Park, and Christy Park (not yet completed). Numerous additional parks of a similar size are needed in many closely populated districts. A neighborhood park in the business district, perhaps on the waterfront, is a well-recognized necessity.

Our numerous small parks and playgrounds are as follows:

Name	Area in Acres
Buder Memorial Square .....	2.35
Carnegie Place .....	2.07
Carr Square .....	2.30
Clifton Heights .....	4.40
Columbus Square .....	2.16
Dakota Park .....	3.17
De Soto Place .....	1.64
Fountain Park .....	3.10
Gamble Park .....	1.15
Jackson Place .....	1.62



Illustration No. 16.—The out-door swimming pools are a most popular part of the recreation system. Thousands of children and adults here enjoy the leading summer sport.

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Name	Area in Acres
Laclede Park . . . . .	3.17
Lucas Garden . . . . .	1.09
Mullanphy Square . . . . .	1.92
Mullanphy Courts Square . . . . .	7.45
Pontiac Square . . . . .	1.91
Riverside Park . . . . .	5.67
Soulard Place . . . . .	1.94
South St. Louis Square . . . . .	1.66
Washington Square . . . . .	6.00
Yeatman Square . . . . .	3.43
O'Fallen School Playground . . . . .	0.32
Dumas School Playground . . . . .	0.30
	<hr/>
	58.82

The service rendered by these is exceptionally good and their distribution in growing areas is excellent.

### **Future Acquisition of Parks**

An accompanying diagram shows the growth of St. Louis in population and in park area. The park area has increased somewhat irregularly but has kept pace with population increase until within the past few years. In a city which is not surrounded with closely built up areas and where natural park areas abound and can be had for the lowest prices, the park area should be kept well in advance of population increase. Numerous neighborhood parks and smaller parks and playgrounds are needed east of Grand avenue. Illustration No. 14 shows this very clearly. Compare this with Illustration No. 15, and see the relation of density of population to distribution of park area. In 1907 the report of the Civic League on "A City Plan for St. Louis," contained some vivid figures on park distribution in St. Louis, which are proportionately as true today as in 1907, as follows:

### Park Distribution

“Taking the city as a whole, St. Louis devotes a very satisfactory portion of her total to public purposes. Thus, 9,285.99 acres of a total of 39,276.25 acres, or 23 per cent of the total acreage of the city is devoted to parks, streets and alleys, and school grounds and school buildings. When these figures are studied by districts, however, gross inequalities appear. Dividing the city roughly into three districts: that between the river and Jefferson avenue to be called the Eastern District, that between Jefferson and Grand avenues the Central, and that from Grand avenue west to the city limits the Western District, we find:

#### In the Eastern District

277,928 people, or 48.3% of the total population (1900)  
7,699 acres, or 19.5% of the total acreage  
148.59 acres, or 6.9% of the total park area

#### In the Central District

123,519 people, or 21.4% of the population  
3,835.75 acres, or 9.7% of the total acreage  
178.15 acres, or 8.3% of the park area

#### In the Western District

173,791 people, or 30.3% of the population  
27,771.50 acres, or 70.8% of the total acreage  
1,729.83 acres, or 84.7% of the park area.

“In other words, 48 per cent of the people have easy access to less than 7 per cent of the park area; 21.4 per cent of the people have 8 per cent of the park area, while 30 per cent of the people have 85 per cent of the park area.

“Putting the above figures in another form, we find that in the *Western District there is one acre to every 96.5 persons, in the Central District one acre of park area*



*to every 701.2 persons, while in the Eastern District there is but one acre of park area to every 1,871 persons.*

“It may be argued that these figures are misleading, as Forest Park, which lies in the Western District, exists for all the people of the city. While this is partially true as regards the people living in the Central District, the number of those living in the Eastern District who are able to spend either the time or the money necessary to visit Forest Park is so small that we believe the proportion as given above is approximately correct.

“St. Louis has no definite program or means of adding to its present park area. All additions to the park area are paid for out of current revenue, an obviously short-sighted policy inasmuch as the benefit of parks is lasting and not of present value only. Result—no new park areas are secured.”

•

## A HOUSING PLATFORM

**E**VERY family has a right to a safe, decent and sanitary home; healthful surroundings; adequate sanitation; ample and pure running water inside the house; modern and sanitary toilet conveniences for their exclusive use, located inside the building; adequate light and ventilation; reasonable fire protection; privacy; rooms of sufficient size and number to decently house the members of the family; freedom from dampness; prompt, adequate collection of all waste materials. These fundamental requirements for decent living should be obtainable by every family at a rental not to exceed one-fourth of the family income.

LAWRENCE VEILLER,

*Secretary National Housing  
Ass'n. and foremost authority  
on housing.*

**I**F DESTRUCTION of life and property by disease were as spectacular as destruction by fire, protection against disease breeding houses would precede protection against those that spread only fire.

ROBERT W. DeFOREST,

*President National Housing  
Ass'n.*

## HOUSING

Good homes make good citizens. Never has there been greater need for good citizens than today. St. Louis has enjoyed the distinction of having a larger percentage of home owners than any great American city, but no definite concerted effort to maintain a high standard of home ownership and maintenance is being made. Without real progress in housing, disastrous conditions are encouraged and invited.

No greater problem confronts the average city family than that of securing living quarters at once sufficiently large, reasonably cheap and having necessary conveniences. The more limited the family income, the more difficult becomes the task of obtaining a suitable place to live. Enterprising land developers have taken advantage of the demand for living quarters and devised various forms of multiple dwellings where homeseekers can find quarters according to their means. But no multiple dwelling that was ever built can as a rule supply all the necessities, the privacy and conveniences of a single dwelling. Obviously, land and materials are so expensive in cities that to provide for each family a single detached structure, fully equipped and with some little land, is economically impossible. Baltimore and Philadelphia have produced the closest approach to desirable homes in the small single family house built in rows, each on a comparatively small lot. In other cities the many-storied multiple dwelling has thrived. At great sacrifice in room, or light, or air, or privacy or any number of other necessities, families have secured places within their means, only to pay an abnormal price in physical, mental and moral degeneration.

### **Housing Evils in St. Louis**

Housing evils do not exist in the tenement alone. The evils long prevalent in St. Louis are not altogether in tenements, which until recently have been comparatively few in number here, but in the use by many families of houses designed for use by but one family. Careful analysis of the housing situation in St. Louis by Miss Charlotte Rumbold for the Civic League in 1907, and by Lawrence Veiller, Secretary of the National Housing Association in 1916, also under the auspices of the Civic League, revealed the following undesirable conditions:

- Existence of dark rooms.
- Existence of privy vaults.
- Incomplete removal of garbage, rubbish and other wastes.
- Uninhabitable and dilapidated houses.
- Existence of stables in residential districts.
- Existence of wooden sheds and outbuildings.
- Cellar and basement dwellings.
- Inadequate sinks and catch basins.
- Outside water supply.
- Unclean yards and vacant spaces.
- Room overcrowding.

Not one of the evils mentioned would be tolerated by the average family when possible to avoid them. In fact, few of these evils would ever exist if their avoidance was possible. But it so happens that a great many of our fellow citizens are living amid conditions which they are powerless to prevent or from which they are unable to extricate themselves. Limited finances force families into such environment simply because there are no other places to be found. It is simply that suitable living quarters, free from common evils, are not attainable at moderate rentals. The condition is indeed a serious commentary on progress in American cities. Until a more satisfactory form of moderate priced living

quarters has been devised and universally adopted, the majority of housing evils will continue to thrive.

### **The Cause and Cure of Housing Evils**

The housing evil is a distinct and concrete thing. Its existence is realized but seldom appreciated, for unpleasant things are most easily forgotten or ignored unless they are daily brought to our attention. To secure the best of housing conditions is neither a visionary nor theoretical process; rather is it an imperative necessity in the interests of public health and safety, but an undertaking of unparalleled difficulty. Attempts at housing improvements are always stubbornly opposed, and quite naturally so, for it is a well known fact that few properties pay their owners better than does low class residential property, especially the multiple dwelling type. Low taxes and no great expense for upkeep and repair, offset by rentals which are indeed large in comparison to space occupied, are good and sufficient reasons for landowners and landlords to fight to maintain a lucrative investment, even though that income is made possible through a sacrifice of human life.

Undesirable housing conditions are partly the result of private avarice and greed, but they have been made possible through unwonted lack of public interest. The present public attitude toward housing reform in St. Louis is lethargic and indifferent. Only an epidemic of a dread disease would arouse a public demand for relief from intolerable conditions, and this demand would probably pass with the stamping out of the disease.

Humanitarianism has not sufficiently far developed in the average individual to make him at all times his brother's keeper. Housing reform is most assuredly a humanitarian movement, a social undertaking and therefore one which to be successful must override the interests of politics and of greedy landlords. The initiative

in housing reform must be by private effort, since the city's immediate interest is only that of public health and safety as affected by unsanitary conditions and buildings dangerous because of poor repair. Unquestionably there is much that the city can do through more rigid enforcement of existing laws, but unfortunately the incentive for such enforcement must be stimulated by outside interests, since a city, at best, is never supplied with an adequate incentive for betterments usually known as "reforms." A further obstacle to housing reform is the reflection of public matters related to the housing question. When public interest and concern is sufficiently aroused, the general attitude of courts and responsible departments and officials will be decidedly more sympathetic and more helpful.

### **A Permanent Housing Body**

Housing conditions in St. Louis are in need of improvement. The evils are not widespread but should be stamped out before they become a menace. They are small cancers which threaten the future well-being of the community. To eliminate them is a task surmounted with difficulties—a task which requires persistent and well organized effort. Ineffectual attempts at housing reform invite failure and each failure serves but to encourage the strengthening of the opposition which must be overcome.

Nothing is of greater moment than good health conditions. Where homes and habitations are unsanitary and in poor repair, the health of the community is not promoted. A well organized, well equipped, reputable, permanent housing body could do more for St. Louis than can possibly be described. St. Louis has been lax in dealing with its housing situation, for despite building ordinances, which are pointed to with great pride by those unfamiliar with actual conditions, malignant evils

are to be found. With little or no persistent effort to wipe them out, their spread can be expected.

The following program of activity for a permanent housing association or organization is suggested in the report of Mr. Lawrence Veiller, already referred to above:

**“Elimination of Dark Rooms**—Every interior un-ventilated and dark room in the City of St. Louis should be abolished. This can be done by cutting a window into the room, where it is possible, and this window should be cut in the outer wall. It is frequently possible to do this, cutting windows over the roofs of adjoining buildings or opening on neighboring premises. This can be done without encroachment on adjoining property from a legal point of view. Where this cannot be done, large windows should be cut in the partitions separating one room from another room in the same apartment. It is not wise to throw two rooms into one and string a curtain between. It is far better to maintain the existing partitions, as otherwise privacy is destroyed.

**“Removal of Garbage, Rubbish and Other Wastes**  
—This involves:

“(a) The providing of proper receptacles, metal cans for the holding of each class.

“(b) The doing away of the storage on the premises as is now the practice in some parts of the city.

“(c) The prompt removal of garbage every day. This is more important in the homes of the poor than in the homes of the rich.

“(d) The removal of rubbish and other wastes frequently, never less than once a week.

**“Removal of Privy Vaults**—It will undoubtedly be necessary to draft a proper law or ordinance before this work can be done. The essential thing in drafting such a law is to see that the existing vaults are all removed within a reasonable time, a time that is not too far distant; that is, vaults where there is community water supply. They can even be removed in districts where there are no sewers.

“It is essential that no outdoor substitutes for vaults

should be permitted. They are practically as bad as the vaults.

“It is equally important that the new toilets which are installed as substitutes for the vaults should be fixtures of a modern type and should not be placed in either dark or unventilated places, but always in compartments with windows to the outer air.

“Another element is to make sure that the law makes provision for the situation where property owners have not sufficient funds to do the work. Under such circumstances several cities have found it advantageous to provide that the cost of such improvements may be distributed over a five-year period, the city paying for the work and making the expense a lien on the property.

**“Uninhabitable and Dilapidated Houses**—All houses that are unfit for human habitation should be promptly vacated and those that are not easily repairable should be condemned and destroyed. A well organized campaign in this direction should be undertaken.

“In the first place, the city should acquire the power to enable the Board of Health to undertake this work. It should then have a survey made to discover such houses and promptly proceed to vacate and condemn.

**“The Stable Nuisance**—The stable, in view of its importance as a breeder of flies, should be eliminated from residential districts. This should be done in an organized way, not merely in response to complaints of nuisance. An ordinance should be passed prohibiting the maintenance of stables in blocks in which two-thirds of the buildings are used for residential purposes, and the Board of Health should promptly proceed to close such stables after the enactment of legislation of this kind.

**“Outbuildings, Sheds, Etc.**—The city should start an organized campaign for the removal of all of the existing wooden sheds and outbuildings, as these are a distinct fire menace besides being sordid and unsightly and encroaching upon much needed play space and space for light and air. Much of the worst portion of



the poor quarters of the town would be greatly improved by this one measure alone.

**“Cellar and Basement Rooms**—The Board of Health should make a careful census of all underground dwellings and should proceed upon a vigorous policy of vacating all cellar and basement rooms which are unfit for habitation either because of dampness, lack of sufficient light and ventilation or generally unlivable conditions. Those that can be improved should be improved and made fit for habitation. All others should be permanently closed. A system of requiring permits for the occupancy of basement rooms should be installed.

**“Sinks and Catch Basins**—The outside abomination of the metal pipes in which garbage and waste material from the kitchens are dumped on each outside balcony of the ordinary tenement house, should be done away with. If the law is not adequate, the law should be changed. In place of those unsightly and unsanitary arrangements proper modern sinks should be installed in each kitchen. If legislation is necessary it should be obtained.

**“Water Supply Inside the House**—All outside hydrants should be removed and running water should be provided in each kitchen, not on the porch as at present. This is a subterfuge and evasion of the law and should not be tolerated.

**“Yard Drainage and Cleanliness** — An organized campaign to require the paving and drainage of all yards, passageways and other out-premises should be inaugurated and carried into effect.

**“Fire Escapes and Means of Exit**—A canvass of all residential buildings in the city that are without proper means of exit in case of fire should be made by the Fire Department and orders for the installation of proper fire-escapes or extra stairs or other means of exit should be issued and carried into effect.

**“Room Overcrowding**—This is a serious evil but a matter to be taken up last. It is intimately bound up with the next item.

**“The Lodger Evil**—A careful study should be made of the conditions in St. Louis with regard to the taking of lodgers into private apartments. This involves frequent night inspections made under authority of the Health Department and Police Department, the taking of photographs of conditions discovered, the measuring of rooms and the counting of people in them—in general, an intensive study of the question.

“It will also be necessary to formulate and secure the passage of special laws dealing with this evil as well as to provide proper administrative machinery for the enforcement of such laws.”

### **City Planning and Housing**

The City Plan Commission's interest in housing is a result of a conviction that a city cannot truly become practical, efficient and wholesome without good living conditions for all its citizens. A city plan should include adequate legal provisions for good housing in addition to constructive suggestions for making effective use of local environment and conditions. A city plan is not concerned with enforcement of housing laws and ordinances.

The present activities of the City Plan Commission relating to the housing question are:

Supervision of new land subdivision;

Promotion of attempt to secure a city-wide districting plan;

Encouragement of attempt to rehabilitate depopulated districts.

In addition to these activities, the City Plan Commission proposes further:

To encourage building of houses to facilitate best living conditions at low rent;

To encourage building of garden suburbs and generally better land subdivision.

### **To Secure Good Housing in St. Louis**

The realization, of good housing conditions in St. Louis depends upon proper laws and ordinances and adequate enforcement of same. The full enforcement of laws and ordinances depends upon proper supervising and inspection forces and the co-operation rather than indifference or direct opposition of the police and the police courts where offenders are tried. Housing is a subject of sufficient importance to warrant a separate department of the city government having charge of it. A board of health cannot be expected voluntarily to handle all housing problems. It has neither the money, the time nor the necessary staff. A separate department or officer and force should be created in the Board of Health charged solely with housing questions.

The steps necessary to adequate handling of the housing problem in St. Louis are:

- (1) Secure close co-operation of city and state authorities in police matters relating to enforcement of housing law;
- (2) Secure special housing department with private supporting organization if necessary;
- (3) Make enforcement of ordinances obligatory.

*IN THE aspect of a city nothing is more striking than the buildings. They stamp and grave the town. Whatever the site, or the street plan, the character of the way, the buildings are ever the dominating feature. They are background and foreground, they define the vista, and because the community is a collection of human beings, the dwellings in which these residents live and the houses which they build for their work or pleasure are the most obvious material expression of its life.*

*CHARLES MULFORD ROBINSON,*

*Foremost City Planning Authority and Author of Several Standard Works on City Planning.*

## **LOCATION OF PUBLIC BUILDINGS**

Public buildings are of especial significance in the city plan. Their location and design can be so harmonized with the city's form as to inseparably unite them with it. In public buildings we seek to express the dignity and character of a community. By securing a commanding site, or through ample open space, or by sheer strength of design, the public building is usually made to dominate its surroundings.

A single large building with adequate site and open space, properly treated, can be made most imposing. Especially is this true of some state capitol buildings, as in Albany, N. Y., and Providence, R. I. In most large cities, however, the principal public buildings are purely local in character and consequently smaller than state or federal buildings. Yet the same care in design, setting and treatment, characteristic of larger buildings, is given to them. What the municipal buildings sometimes may lose in mass and scale can be regained through grouping two or more structures about a common center. Group planning has become a most popular form of city planning activity.

### **Advantage of a Group Plan**

The monumental groups of certain European cities unquestionably have served to inspire those engaged in city building in the newer world. The appeal of the great public building groups of Europe is in the opportunity afforded to give tangible expression to the highest artistic and intellectual attainments of a civilized age. The group plan may have a commanding site, or be at the intersection of several converging streets, or may simply be constructed about the central open space.

More than one group plan is possible in a city of size sufficiently large to have distinctive administrative, commercial and art centers. When a group plan of first importance can be devised at the city's commercial center, it has an advantage more rational than sentimental, for the city may faithfully seem to shape itself about that center, thus preserving a sense of unity and of dignity with advancing years. A still farther advantage of the group plan is to expedite and promote the conduct of public business common to the several buildings.

### **Buildings in a Group Plan**

Public buildings which lend themselves to a group plan treatment are the City Hall, courts building, library, hall of records, art museum, post office, custom house and certain quasi-public buildings, as the railroad station, churches and chamber of commerce.

Numerous other public and quasi-public buildings make possible subsidiary group plans, for instance, eleemosynary and penal institutions, schools and other educational or recreational buildings, forming educational centers or community centers. These latter are not of first importance in group planning.

Where several principal public buildings have been constructed at varying intervals and with no common relation, an eventual group plan is possible, though somewhat improbable. The realization of a complete plan can only be the result of harmonious and persistent effort. Public buildings are comparatively few in number and expensive to construct. Deviation from an accepted plan may be disastrous. The building of a principal group, or civic center, involves an effort extended over many years. The plan is one of lasting merit and value if ample room for expansion is provided in each building. Land for the several units must be acquired when occa-

sion permits and previous to the erection of structures whose cost will make the acquisition prohibitive.

### **Work of the Public Buildings Commission**

Previous to the construction of the Municipal Courts Building in St. Louis, a Public Buildings Commission was appointed by Mayor Rolla Wells to report on the necessity for and location of new public buildings. That Commission presented a plan for a Poor Farm and two alternative plans for a group about the City Hall and Library containing the proposed courts and jail. The Public Buildings Commission made the following significant statement in its report, presented in 1904:

“In presenting the accompanying report your Commission begs to state that it has prepared a comprehensive scheme for the development of the city’s official building along well defined lines, not with the expectation that the whole project should be undertaken under one administration, but rather with a view to so place the buildings most urgently required at the present time as to START a plan so obviously advantageous that in years to come succeeding administrations will recognize the desirability of adding to and finally completing the project prepared under your guidance.”

The Commission realized the value of a proper start as responsible officials apparently did not, for the plans were not followed in the erection of the buildings.

### **A Group Plan for St. Louis**

In public building location St. Louis stands today where it was in 1904, for fortunately, the Municipal Courts Building was placed beside the City Hall and on an axis with the Public Library so that any future attempt at grouping must be about these three buildings. Additional property back of the City Hall and Courts Building is being used for the jail and Children’s Home. This will in no wise detract from a group plan; rather

will it add to such a plan. The Union Station and New Post Office, three blocks west, could possibly be included in a complete group plan, though their distance from the municipal buildings would make a proper design rather difficult.

The fact that each of the municipal buildings is not over distant from the city's business center and so located as to eventually become a part of the downtown business district, makes their location fortunate. No principal converging streets or the probability of same as immediate approaches to the business district, precludes the use of prominent street intersections and limits the design of a group to the central open plaza type with buildings facing about it. Such a plan would be most desirable in view of the surrounding low value property. It should enhance adjacent property values and fulfill the need of open park space in the vicinity.

Several American cities have adopted group plans, notably Cleveland. The city, the government and the railroads have united in forming a group plan fast nearing completion, the cost of land and buildings being approximately \$30,000,000. The buildings face a central mall, the railroad station on the lake front being at the northern end of the group, the city hall and post office at the southern end, with the public library, court house, chamber of commerce, and other buildings on either side. Such a plan has been suggested on the St. Louis riverfront, but its advisability is questionable, not alone because of present buildings being located elsewhere, but because of the engineering difficulties of constructing a station on the river front.

St. Louis should adopt and follow a public building group plan. The opportunity is present, the expense will not be unwarranted and the benefits derived will be tangible as well as sentimental. Even aside from its opportunities, its position as fourth in the list of American



cities should prompt it to achieve what its three leaders and many of the cities lower in rank are striving for and who already see their efforts assuming definite form.



*Photograph kindly furnished by Newark City Plan Commission*

**Illustration No. 17.**—A combined standard for lights and wires would eliminate many of the numerous poles on the streets of St. Louis. Compare this standard with those shown in Illustration No. 5.

*“REGARD for beauty must neither follow  
after regard for particular ends to be ob-  
tained nor precede it, but inseparably  
accompany it.”*

*JOHN NOLEN,*

*Foremost City Planning Au-  
thority and Consultant in  
numerous American cities  
and towns.*

## **THE CITY'S APPEARANCE**

As clothes do not make a man, so appearances do not make the city. Yet, poor appearances, like ill-kept clothes, make a most unfortunate first impression. And first impressions are extremely hard to live down. St. Louis once had unfiltered and discolored water. It now has water that is unexcelled. Yet, how few there are outside St. Louis who really believe it has good, clear water! Visitors to St. Louis, and there are thousands of them each year, learn with amazement of the good water St. Louis now has. What do these visitors think of the general appearance of the city? Do they get a true impression of St. Louis as a city of homes, a city with thriving industries and great potentialities? Or must they wait until St. Louis has undergone a civic reformation and ten years hence learn for the first time what this city truly is?

### **The Appeal of a City**

To those who daily pass about the city on business or on pleasure, the appeal of a city is not so much in points of public interest, in parks or public buildings, but in the general appearance of streets and places of common use. When streets are unswept or cluttered with wires, poles or signs, no observant person hesitates to express disapproval. Where the appearance of a street is carefully attended to, a sense of satisfaction is felt by all who come in contact with it.

Where people take pride in their homes they will demand the same care of public property as they give to their homes and grounds. The desire for neatness and cleanliness is inherent in most of us. We need to realize, however, that beauty is not expensive, that beauty is not a veneer, a superficial extravagance. Rather than this, beauty is simply the adaptability of form to func-

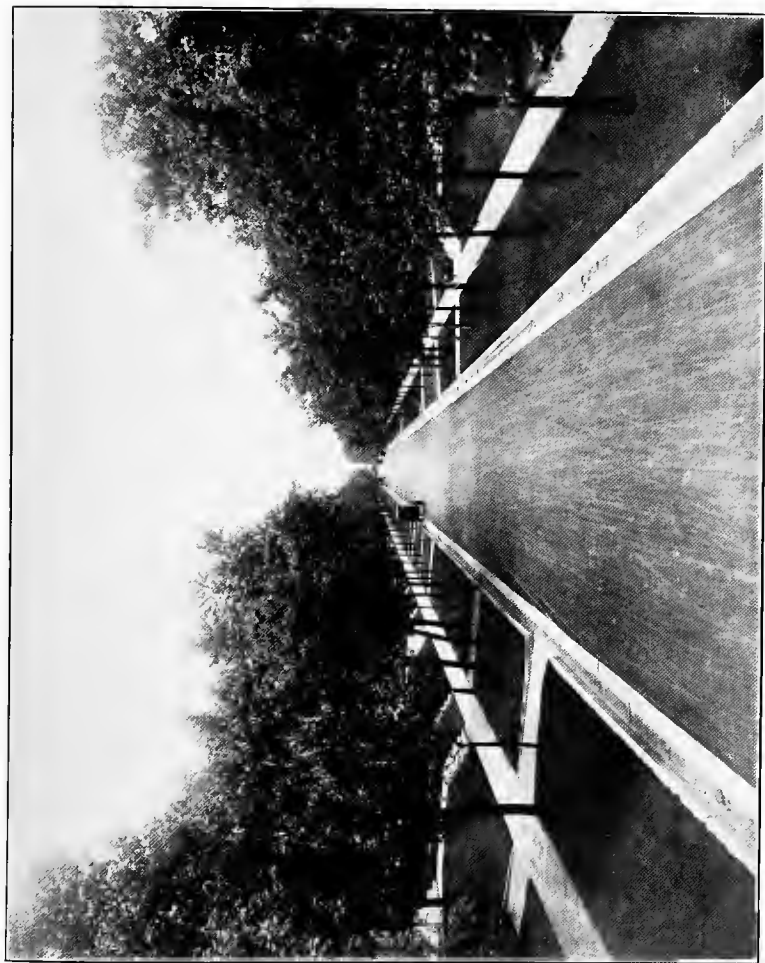
tion. The most simple things are not uncommonly the most beautiful. There is often more real beauty in the workman's modest home than in the pretentious mansion of his wealthy neighbor.

### **City Planning and the "City Beautiful"**

City planning is widely believed to be a "City Beautiful" idea. In the sense of providing a city with necessary public works which shall be attractive but not additionally expensive because of such attractiveness, city planning may truly be said to be a "City Beautiful" idea. The "City Beautiful" may be promoted by such objects of city planning as proper street design; clean, noiseless pavements; removal of unnecessary poles and wires; planting of shade trees; uniform sidewalks; absence of unsightly signs. But these are things which should be done, not expensive extravagances. Beauty and extravagance are not handmaidens. We can have beauty without extravagance, and in this sense city planning may be considered a "City Beautiful" idea. Where utility is sacrificed and extravagance substituted the "City Beautiful" may be promoted; city planning is not.

### **Sidewalks and Pavements**

The surfacing of roadways with materials which will stand the wear of many vehicles, and the building of walks for pedestrians, are necessary and expensive parts of street construction. In each, but more especially in pavements, the principal requirements are durability, cleanliness, neatness and noiselessness. The character and traffic of a street should determine the type of pavement to be used. For residence streets a smooth pavement such as asphalt or wood block is most desirable, since cleaning is easier and there is much less noise than from brick or stone block pavements. As for wear, the



**Illustration No. 18.**—A pleasing type of minor residential street resulting from uniform tree planting, small roadway and ample park space between sidewalk and curb.

smooth surface will sometimes outlast by far the cheaper forms of paving. The granite block pavement used in industrial districts is needed for heavy traffic and is not objectionable because of noise there. Granite block pavements can now be laid in such a manner as to avoid much noise.

St. Louis has a very considerable area (940 miles) of well paved streets. An over abundance of granite block and brick pavement exists in streets used for residence. New pavements are now laid more according to local necessities, however, for petitioners are more inclined to ask for the right pavement. The wearing qualities, noise and appearance are being considered more than formerly.

### **Granitoid Sidewalks**

Granitoid sidewalks are required in a large central district of the city extending from Third street to the western city limits and from Easton avenue and Franklin avenue on the north to Spruce street (3rd to 12th), Market street (12th to Jefferson), Laclede (Jefferson to Kingshighway) and Lindell (Kingshighway to city limits) on the south. The use of the granitoid sidewalk of uniform construction is most fortunate in preserving the appearance of the street. Nothing is so detrimental to the appearance of the street as a sidewalk composed of a miscellaneous assortment of flagstones and concrete slabs of varying size and mixture. The universal adoption of granitoid sidewalk is recommended since this is now practically as cheap to construct as any other sidewalk. In 1915 a total of 9.8 miles of sidewalk was laid—approximately 9.0 being granitoid.

### **Wires, Poles and Lights**

In the elimination of poles and wires St. Louis has made more progress than it is generally credited with.



**Illustration No. 19.**—Unnecessary roadway width, poor tree planting and small parking space does not encourage good residential development or stability of growth.



No standards for comparison with other cities exist, but in most cities the conduit districts, where all except trolley wires are carried underground, include the business district and all main thoroughfares. To construct conduits is expensive, much more so than to erect poles for the wires, yet eventually there is a saving through reduced maintenance charges. The conduit district of St. Louis as established by the Keyes Ordinance in 1898 extended from the Mississippi River to Twenty-second street and from Wash street to Clark avenue. In 1913 a further ordinance was passed requiring the removal of poles and wires from two miles of city streets in 1914, from three miles of city streets in 1915, and from four miles of city streets each year thereafter. Under this latter ordinance Kingshighway (from Arsenal to Easton) Grand avenue (from Market to the Water Tower) and numerous other streets have been freed from wires and poles excepting only poles for street lights and trolley wires.

The utility corporations are also placing many of their wires in conduits in streets not restricted by ordinance.

In the restricted districts there are still some superfluous poles. On Twelfth street, for instance, there are separate poles for trolley wires and for street lights. One pole could perform the function of those two, as is done in many other cities and in a most attractive manner.

The alleys are used for poles and wires in some instances. The majority of poles and wires should be in the alleys when not underground.

A most attractive light standard has recently been adopted and its use is being extended. The further extension of its use should be encouraged.

Standard poles for lights, fire, police or mail boxes and uniform street name signs should be adopted.

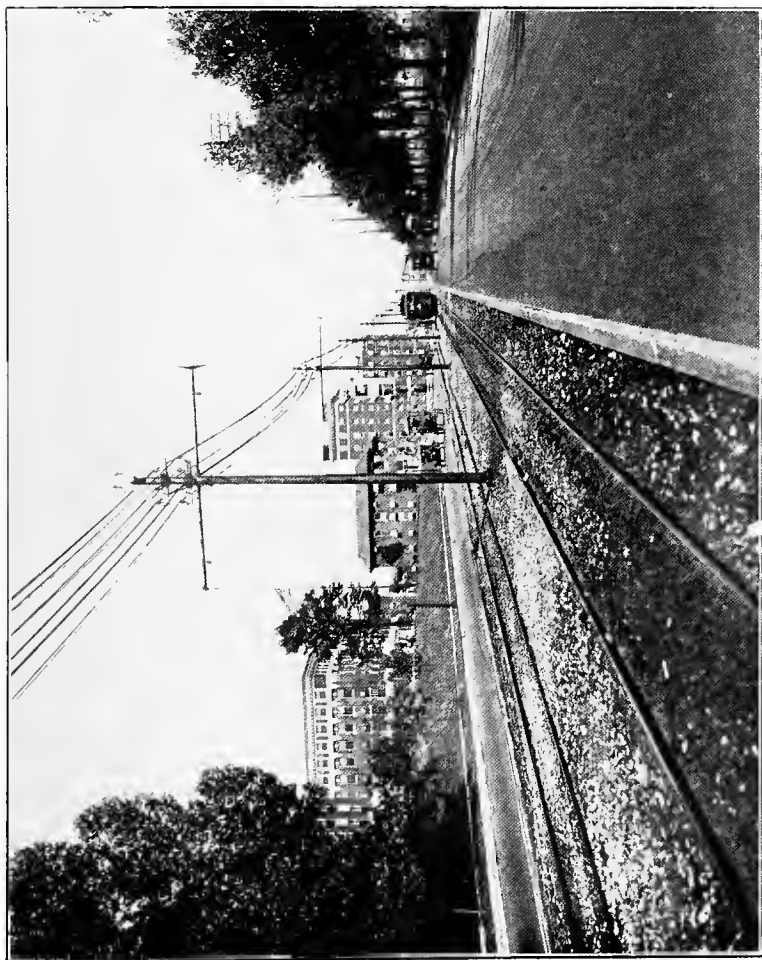


Illustration No. 20.—Delmar avenue is a leading arterial street. Car tracks are separated from the traffic roadway by curbs, and trolley wires are suspended from center poles. Better tree planting and grass between the tracks would produce a much more attractive and finished street.

## **Trees**

With the realization that cities and trees can exist at one and the same time has come an organized attempt to secure more widespread and uniform tree planting. Most cities have created within the past 10 or 15 years a department or officer to supervise the planting and care of trees. The position of City Forester was created in 1907 in St. Louis. Full authority should be given the City Forester to secure universal and uniform tree planting. The benefit of uniform planting will be most conspicuous once the trees have acquired a sturdy growth. No uniformity can result where the initiative rests with each individual owner, some having preference for one kind of tree, another for other kinds. Adequate funds for maintenance should be provided to insure continuous effort.

Trees are a decided advantage to the street, not merely in appearance but in their ability to provide shade and to relieve the monotony and artificiality of the average city street. Careful selection of types of trees and care in planting will avoid the evils so often cited by those who object to planting trees in the streets of the city.

## **Signs and Billboards**

St. Louis is possessed of as good ordinances regulating the erection of signs and billboards as can be found. In billboard regulation St. Louis was a pioneer. Its ordinances have been upheld by the State Supreme Court. Signs projecting from buildings and overhanging sidewalks are rigidly restricted and cannot be said to permit disfigurement of the street. While billboards are restricted in location and design, it is doubtful if these monstrosities could ever become unobjectionable. A further restriction on location should be imposed, if possible.

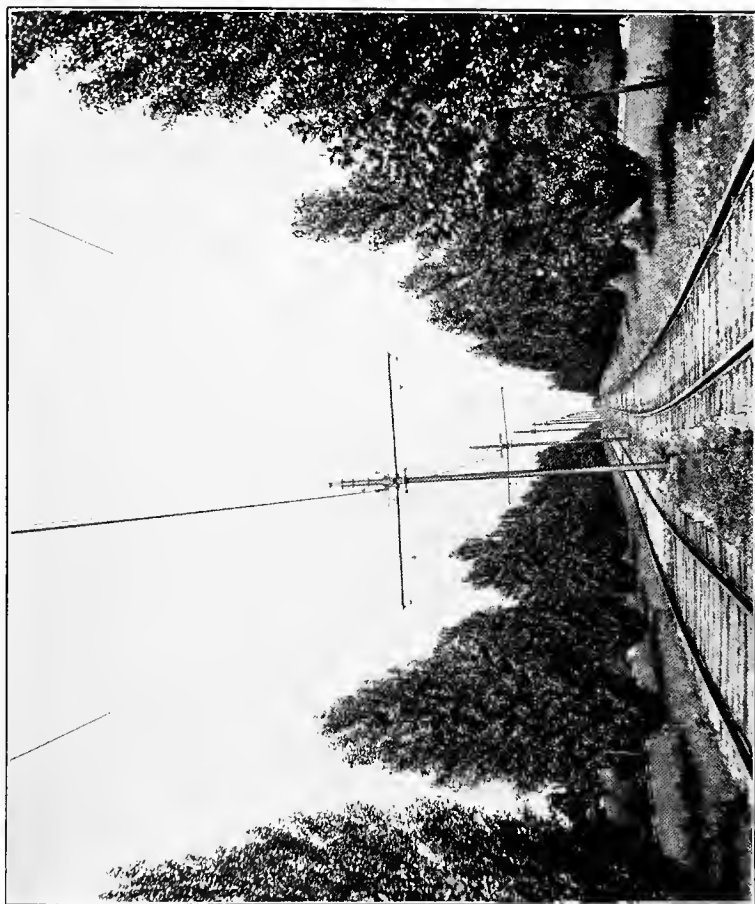


Illustration No. 21.—On Wydown boulevard the trolley tracks are screened by rows of poplars.

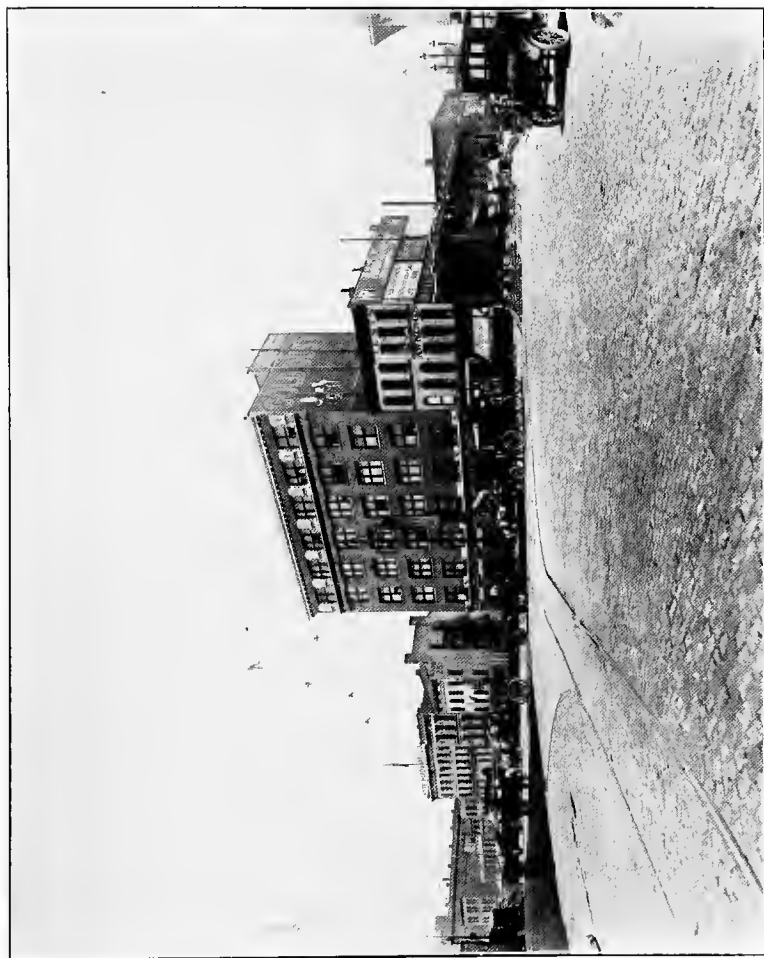
Opposite one of the most prominent building groups in the city appears a large billboard across a large vacant lot.

### **Street Car Tracks**

The treatment of spaces between car tracks is a matter of importance on wide thoroughfares. With the exception of boulevards, it is usually necessary to have street cars on most wide streets. When the street is one hundred feet wide, or more, the placing of car tracks and poles for trolley wires is to be considered, since the expense and unsightliness of placing poles at the sides and tracks in the middle of the street is not always the most desirable procedure. When the tracks are placed in the middle of the street, poles for the wires should be between the tracks and could well be of ornamental design. On some wide streets the car tracks are placed near the sides of the street sufficiently far from the curb to permit one vehicle to pass. Poles for wires can then be placed on the side of the street. When such a form of street subdivision is followed, the slow moving traffic is permitted between the curb and trolley track, while in the center of the street is a wide right-of-way where fast moving traffic can proceed unobstructed.

Usually the traction companies pave between their rails either with the same pavement as exists on the remainder of the street or with some substantial pavement such as stone or wood block. When unsubstantial paving is used between rails, it soon gets out of repair and causes the track to become out of repair as well. When no paving is used between the tracks there is great danger of spoiling the appearance of the street. Delmar avenue west of Kingshighway is an example of a good street greatly spoiled in appearance through the use of ballast instead of paving.

When there is no paving between street car tracks,



**Illustration No. 22.**—The lack of attention given to the few bridge entrances in St. Louis is really surprising. These gateways to the city should be made to convey a more characteristic impression of a great city. The large plaza at the entrance to Eads Bridge, shown here, could be greatly improved.

the use of ballast should be prohibited unless hedgerows are used for screens on either side. Grass is used instead of paving occasionally and is attractive and desirable when properly maintained.

### **Street Intersections or Plazas**

Where several streets converge to a common intersection, there often is opportunity for special treatment. A circus with central feature visible for a distance along each of the street approaches, a statue, fountain, grass plot or flower bed, will normally produce an attractive result. Where special conditions occur, such as a bridge approach or park entrance, special well-studied treatment is greatly to be desired, since these are the city's gateways. St. Louis has several present opportunities to create plazas of unusual importance, notably the approach to the Eads Bridge, the approach to the Municipal Bridge and the Lindell entrance to Forest Park. The recent controversy concerning the park entrance makes this a matter of delicate discussion. Yet a plan is needed and the sooner one is adopted, the sooner will the controversy be ended. The opportunity is at hand. St. Louis should make the most of it.

The present park entrance at Lindell boulevard and Kingshighway has for its main features a large green-sward, the Grand Drive and the Blair Monument. Each of these should be preserved, with the possible exception of the present position of the monument, which could be changed without difficulty if necessary. The occasion for changes at this entrance has arisen from rather congested traffic conditions on Saturdays, Sundays and holidays. The movement of traffic unquestionably is a factor in the design of any street intersection. At the Lindell entrance the demands of traffic must dictate largely the street design, but not the architectural or



Illustration No. 23.—The St. Louis entrance to its new \$7,000,000 Municipal Bridge, looks like the approach to a frontier town.



landscape design. At prominent street intersections such as this, traffic can be handled in either one of two ways:

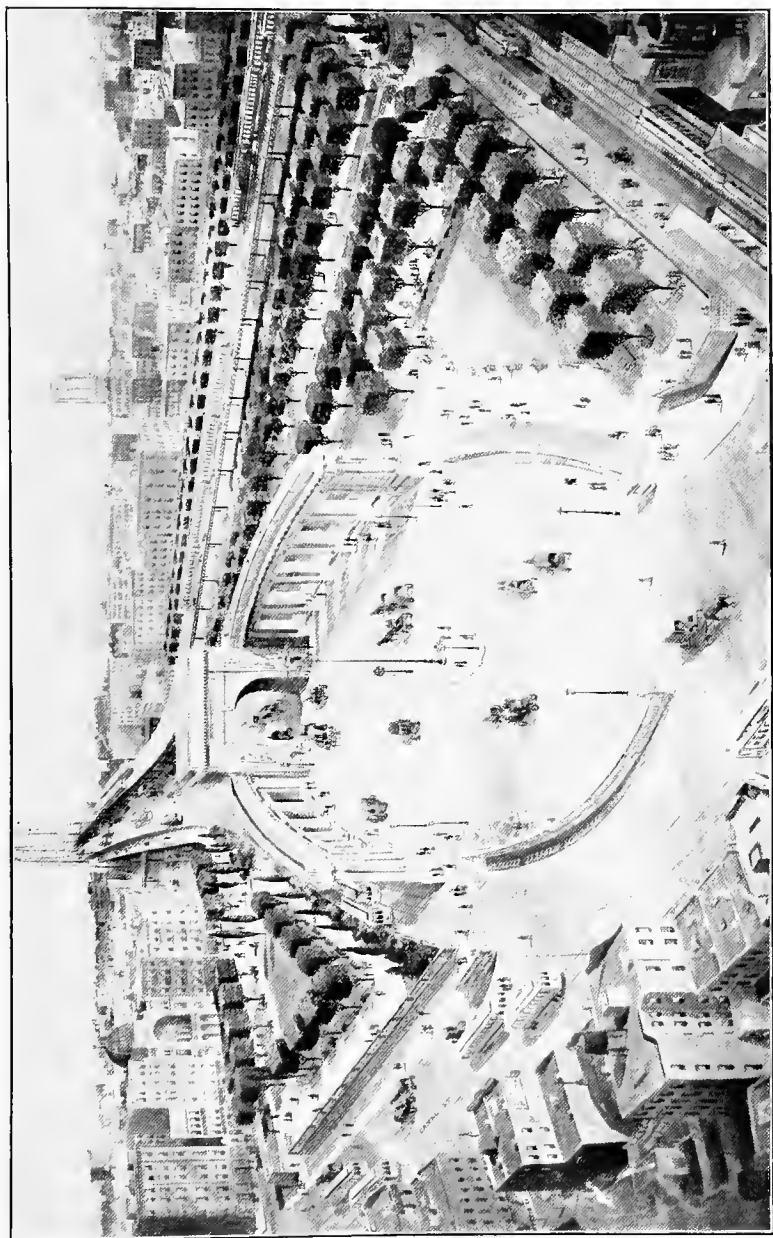
- (1) By circular flow in one direction only.
- (2) By direct right angle crossing.

If handled by circular flow, there must be some form of a circus—either circle or ellipse—with a central feature, the center of the figure to be on center with each of the intersecting streets. This form of intersection usually lends itself best to decorative treatment but has not seriously been considered at the Lindell Entrance inasmuch as its construction would necessitate the acquisition of additional property on one or more corners for the sake of making the figure on center of Kingshighway and Lindell boulevard.

The direct right angle crossing has not been considered either, though the present intersection attempts to accomplish this. A new roadway into West Pine boulevard has been constructed to divert traffic from the present congested intersection, which will serve its purpose to good advantage. •

A definite final plan should be prepared which shall embody all of the present desirable features and yet create a park entrance in keeping with the park which is one of the largest and most extensively used parks in the United States.

•



*Illustration kindly furnished by the Committee on the City Plan, New York*

**Illustration No. 24.**—The entrance to the new Manhattan Bridge over the East River, New York, should serve to stimulate a greater appreciation of the importance of bridge entrances and the necessity for treatment in accordance with their character.



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# APPENDIX

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## **PROPOSED LAW AUTHORIZING THE ESTABLISHMENT OF BUILDING LINES**

**An Act to Authorize the Establishment of Building Lines on Streets in Cities Which Now Have or May Hereafter Have 500,000 or More Inhabitants and to Provide the Manner in Which Damages and Benefits May be Determined and Paid.**

*Be It Enacted by the General Assembly of the State of Missouri, as follows:*

Section 1. The word "street," as used in this act, means any public highway, esplanade, boulevard, parkway, square or street, or any part or side, or part of the side, of any of the same.

Section 2. It shall be lawful for any city now having or which may hereafter have 500,000 or more inhabitants, to provide by ordinance for the establishment of building lines on any public street or highway. Such building line shall be established by the same procedure as that provided by law in such city for the acquiring of land for the opening of streets. After the establishment of any such line no building or other structure shall be erected, reconstructed or substantially repaired and no new buildings or other structure or part thereof shall be re-erected within said lines so established.

Section 3. Whenever and wherever a building line shall be established as aforesaid, all structures extending within such building lines shall be required to conform to the new line within a period of not more than 25 years from the time of establishing said lines; such time to be provided in the ordinance, providing for the establishment of such line. At the expiration of the time limit in which all structures are so required to conform to the new building line, the proper municipal authorities shall proceed in the manner then provided by law relating to condemnation proceedings by such cities to remove all structures then within such line; provided,

however, that all owners of property so affected shall receive due notice and hearing in the manner then provided by such law in the determination of the additional damages sustained by the removal of such structure then within the building line.

Section 4. In payment for the real estate, improvements and easements to be taken and acquired for the establishment of such building lines as are herein provided and of the damages sustained thereby, benefits shall be assessed and collected in the same manner as provided by law in proceedings in any such city for the acquiring of lands for the openings of streets.

Section 5. This act shall not limit or abridge any power now or hereafter conferred by law on such cities to establish building lines or take any property or any interest therein by eminent domain.

### **PROPOSED LAW AUTHORIZING THE CREATION OF A PERMANENT ASSESSMENT BOARD**

**An Act Granting Authority to Any City in This State Now Having or Which May Hereafter Have 400,000 Inhabitants, to Provide by Ordinance or Charter Provisions for the Appointment, Term of Office and Removal of a Board of Assessment Commissioners Who Shall Have the Power to Assess Benefits and Damages in Condemnation Proceedings.**

*Be It Enacted by the Senate and General Assembly of the State of Missouri, as follows:*

Section 1. Full power and authority are hereby given and conferred upon every city of this State which now has or may hereafter have 400,000 inhabitants to provide for the appointment, term of office and removal of a Board of Assessment Commissioners, who shall constitute a permanent board for the assessment of benefits and damages in condemnation proceedings instituted by any such city; and such provision may be made either by charter provision therefor adopted by the people of

said city, according to the law, or by the people thereof under the power of the initiative.

Section 2. It shall be a feature of all such laws or ordinances that said Board of Assessment Commissioners shall be a permanent board who shall sit from day to day and assess benefits and damages in condemnation proceedings as may be provided by said city as aforesaid.

Section 3. Said city shall have power by ordinance or charter provision to fix the number of said commissioners constituting said board, their terms of office and the manner of their appointment, and the manner in which they shall discharge their duties.

### **PROPOSED LAW REQUIRING APPROVAL OF ALL LAND SUBDIVISIONS**

**An Act to Provide for the Filing of Plans, Plats or Re-plats of Land in Cities of 400,000 Inhabitants or Over.**

*Be It Enacted by the Senate and General Assembly of the State of Missouri:*

All plans, plats, or re-plats of lands laid out in building lots, and streets, alleys or other portions of the same intended to be dedicated to public or private use, or for the use of purchasers or owners of lots fronting thereon or adjacent thereto, and located within the city limits, shall be submitted to the board or body having charge of the design, construction and maintenance of city streets and approved by it before they shall be recorded. And it shall be unlawful to receive or record such plan in any public office unless the same shall bear thereon, by endorsement or otherwise, the approval of the board or body having charge of the design, construction and maintenance of city streets. The approval of the board or body having charge of the design, construction and maintenance of city streets shall be deemed an acceptance of the proposed dedication for public or private use as the case may be; but shall not impose any duty upon the city concerning the maintenance or improvement of any such dedicated parts, until the proper authorities of the

city shall have made actual appropriation of the same by entry, use or improvement; and owners and purchasers shall be deemed to have notice of the published plans, maps, and reports of the board or body having charge of the design, construction and maintenance of city streets affecting such property within its jurisdiction.

### **PROPOSED CONSTITUTIONAL AMENDMENT GRANTING POWER OF EXCESS CONDEMNATION**

**Submitting to the Qualified Voters of the State of Missouri an Amendment to the Constitution Thereof Granting to the State, Municipal Corporations and Other Political Subdivisions of the State the Power of Excess Condemnation.**

Section 1. Providing for excess condemnation by the state, municipal corporations and other political subdivisions of the state. Be it resolved by the house, the senate concurring therein: At the general election to be held on the Tuesday next following the first Monday in November, A. D. 1918, an amendment to the Constitution of Missouri shall be submitted to the qualified voters of the state in the following words: Whenever the state, a municipal corporation or any political subdivision of the state authorized by law to take private property for public use, shall appropriate or condemn any private property for any public use whatsoever, or when the state, a municipal corporation or any political subdivision of the state authorized by law to take private property for public use in furtherance of such public use, shall provide for any public work or improvements which shall damage or benefit private property, the state, municipal corporation or any political subdivision of the state authorized by law to take private property for public use, may provide for the appropriation in fee by the state municipal corporation or other political subdivision of private property or any easement or use therein in excess of that actually required for such specific purpose, under such conditions as shall be prescribed by the legislature or general laws of the state, or as prescribed



by the charter and ordinance provisions of any such municipal corporation operating under special charter, and such excess property or right therein so acquired by the state, municipal corporation or other political subdivision, may be sold, leased or otherwise disposed of by it under such terms and conditions as may be prescribed by the laws of the state and the charter and ordinance provisions of any municipality, corporation or other political subdivision, and this right of the state, municipal corporation, or other political subdivision to acquire and sell such excess property is hereby declared to be a public use; provided, however, that such excess shall be condemned and compensation therefor ascertained in the same proceeding, and in the same manner as near as may be, as the private property, easement or use actually needed, as aforesaid; and provided, further, that the value of such excess shall be paid for by the state, municipal corporation, or other political subdivision, as the case may be.

### **PROPOSED LAW AUTHORIZING CREATION OF A COUNTY PLAN COMMISSION**

**An Act to Provide for a County Plan Commission in Counties Now Having or Which May Hereafter Have, a Population of 100,000 and Less Than 200,000 Inhabitants, Providing Funds for Same, Defining the Powers and Duties of Such Commissions.**

*Be It Enacted by the General Assembly of the State of Missouri:*

1. That in any county now having, or which may hereafter have a population of 100,000 and less than 200,000 inhabitants, there may be created a body to be known as the "\_\_\_\_\_ county plan commission" (inserting in the blank space the name of the county in which the body is created). For the purpose of ascertaining and determining the population of counties in this state that may have a population of 100,000 and less than 200,000 inhabitants, the aggregate vote cast for the first candidate for elector on each ticket, voted for

at last preceding presidential election in such county shall be multiplied by five and the product shall be deemed the number of inhabitants in such county.

2. The county plan commission shall be composed of citizens who shall hold no other public office, one to be appointed by the mayor of each city and incorporated town in the county and there shall be as ex-officio members the county engineer, the presiding judge of the county court and one other citizen who may or may not be a public official to be appointed by the county court of such county. The commissioners first appointed under this act shall hold office for three, two and one years by mutual agreement or to be determined by lot, appointments thereafter to be for three years, except that appointments to fill vacancies shall be for the unexpired term only.

3. Such commission shall serve without pay, and shall annually choose from among its number a chairman and vice-chairman. Such commission shall have power and authority to employ professional assistance, clerks and a secretary, and to pay for their services, and to pay such other expenses as such commission may lawfully incur, including the necessary disbursements incurred by its members in the performance of their duties as members of said commission.

4. It shall be the duty of such commission to prepare from time to time, and to lay before the governing body of each political subdivision within the county, and the county authorities, and in its discretion cause to be published, a map or maps of the county or any portion thereof, studies, reports or recommendations for the purpose of securing co-ordinated comprehensive plans of highways, roads, parks, parkways, boulevards, playgrounds, reservations or other public grounds, transit and transportation facilities, or other means of intercommunication, water supply, sewerage and sewage disposal, recreation, housing, location of public buildings and such other matters as may bear on the betterment of such county or portion thereof as a place of residence or for business.

5. All plans, plats or replats of any lands laid out in lots or plots, and the streets, alleys or other portions of the same intended to be dedicated to public or private use shall first be submitted to the county plan commission and approved by it before same shall be recorded, provided, however, that where a city plan commission already exists in the municipality in which is located the land to be platted or replatted, the action of the county plan commission shall be in the nature of recommendation to the local city plan commission. Such plan, plat or replat, having indorsed thereon the approval of the county plan commission or city plan commission as heretofore provided, shall be submitted for action to the county court or to the mayor and city council in which the property to be subdivided is located. It shall be unlawful to receive or record such plan, plat or replat in any public office unless the same shall bear thereon, by indorsement or otherwise, the approval of the county plan commission or city plan commission and the county court or mayor and city council, respectively. The disapproval of any such plan, plat or replat shall be deemed a refusal of the proposed dedication shown thereon.

6. It shall be lawful for the board or body having charge of the finances of any county, as aforesaid, to appropriate money for the expenses of such county plan commission.

### **PROPOSED LAW AUTHORIZING CREATION OF CITY PLAN COMMISSIONS IN SMALL CITIES**

**An Act to Provide for City Plan Commissions in Cities,  
Towns and Villages of This State Which Have a  
Population of 100,000 or Less, Providing Funds for  
Same and Defining the Powers of Such Commissions.**

*Be It Enacted by the Senate and General Assembly of  
the State of Missouri:*

1. That any city, town or village having a population of 100,000 or less, is hereby authorized to appoint a city plan commission.

2. The city plan commission shall consist of five citizens, all of whom shall reside in such municipality and who shall be appointed by the Mayor, each for a term of three years; the Mayor and City Engineer to be ex-officio members of the commission; provided, however, that in the first instance two of the appointments shall be for three years, two for two years and one for one year. Appointments to fill vacancies shall be for the unexpired term only.

3. Such commission shall serve without pay, and it shall be the duty of such commission to prepare, from time to time, plans for the systematic development and betterment of such municipality as a place of residence or for business. It shall have the power and authority to employ clerks and a secretary, and to pay for their services and to pay for such other expenses as such commission may lawfully incur, including the necessary disbursements incurred by its members in the performance of their duties as members of said commission.

The said city plan commission may consider and investigate any subject matter tending to the development and betterment of such municipality, and make recommendations as it may deem advisable concerning the adoption thereof to any department of the municipal government, and for any purpose make or cause to be made, surveys, plans or maps.

Before final action shall be taken by any municipality or department thereof on the location and design of any public building, statue, memorial, park, parkway, boulevard, playground, public grounds or bridge, such question shall be submitted to the city plan commission for investigation and report.

4. All plans, plats or replats of lands laid out in lots or plots, and the streets, alleys, or other portions of the same intended to be dedicated to public or private use, shall first be submitted to the city plan commission and approved by it before it shall be recorded. Such plan, plat or replat having indorsed thereon the approval of the city plan commission shall then be submitted for action to the mayor and city council. It shall be unlawful to receive or record such plan, plat or re-

plat in any public office unless the same shall bear thereon, by indorsement or otherwise, the approval of the city plan commission and the mayor and city council. The disapproval of any such plan, plat or replat by the city plan commission shall be deemed a refusal of the proposed dedication shown thereon.

5. The city plan commission may prepare a plan for regulating by districts the height, bulk, area and use of all buildings in the municipality in the interests of public health, safety and general welfare.

6. It shall be lawful for the board or body having charge of the finances of any city, town or village, as aforesaid, to appropriate money for the expenses of such city plan commission.

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St. Louis . . . . .	48	Zoning,	
Transit and city expansion . . . . .	45	(See Districting.)	
Transit and streets . . . . .	45		







